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Roger Feldman[†]

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[†] University of Minnesota

Vanderbilt University

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COMPENSATION ARRANGEMENTS BETWEEN HOSPITALS AND PHYSICIANS

This paper investigates the pattern of compensation arrangements between hospitals and physicians. Hospitals are assumed to choose a combination of salary and incentive or output-based compensation to maximize utility from profits and physicians' nonpatient care activities. Our theory suggests that medical care prices have implications for the choice of compensation method when risk and the costs of supervision are held constant.

We use data from two hospital surveys to estimate an equation explaining the percentage of a hospital's physicians on salary. Salary arrangements are less frequent where the price of physicians' patient care services is high and revenues from grants and the Medicaid program are low. Implications of these results for public policy are discussed.

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COMPENSATION ARRANGEMENTS BETWEEN HOSPITALS AND PHYSICIANS

I. INTRODUCTION

The hospital is a unique organization in that a principal input in the production of its services, the physician, is generally not a hospital employee. In fact, hospitalized patients frequently receive separate bills for hospitals' and physicians' services and have separate insurance coverage for each type of care. Independent practice and separate fee-for-service billing by physicians explain why most researchers have regarded the hospital and the physician as separate entities.¹

Most models of the hospital focus on its (typically) not-for-profit status.² Although the physician's role is recognized, its implications have not been explicitly explored. Models of physician behavior, on the other hand, have assessed the impacts on physicians of changes in reimbursement by third party payers and changes in the methods by which revenues and costs are shared in group practices.³ Physicians' output is always measured by patient care services. Although this assumption is appropriate for most purposes, it ignores the time physicians devote to teaching, research, and administration.

Despite the separation of hospitals and physicians in theory, few observers doubt that physicians exercise a crucial role in hospitals' use of resources. Physicians' activities (admitting patients, ordering diagnostic tests, and performing surgical and medical therapies) trigger enormous expenditures, more than \$65 billion in 1977, for hospital care.⁴

Furthermore, independent practice is not the only contractual relation between hospitals and physicians. So-called hospital-based physicians (HBPs)--anesthesiologists, radiologists, and pathologists--typically do not have direct contact with patients. Rather, they practice almost exclusively in hospitals, and in a very real sense, their customers are other doctors.

As seen below, the HBPs' hospital orientation is reflected in patterns of HBP compensation.

Finally, although fee-for-service billing by physicians is the most common compensation arrangement, many other arrangements are possible.⁵ For our purposes, the various options can be reduced to two prototype cases: salary and incentive compensation. The distinguishing difference is that salary is unrelated to patient care output whereas all forms of incentive compensation are tied to output.

This study investigates the conditions which determine the observed compensation arrangements between physicians and hospitals. Two public policy issues coincide with our analytic interest in physicians' compensation arrangements. Both concern Medicare and Medicaid reimbursement of physicians. The first focuses on the conditions under which teaching physicians may submit fee-for-service bills for care provided to teaching patients. It has been alleged that some teaching physicians may engage in double billing (submitting fees for reimbursement of professional services while at the same time receiving salaries which are reimbursed as a hospital cost).⁶ The still-unimplemented Section 227 regulations of the 1972 Social Security Amendments are designed to reduce the possibility of double billing by requiring a very strict test of an existing private patient-physician relationship.

The second issue involves supposedly undesirable consequences of percentage-of-departmental-revenue arrangements, which occur most frequently in the compensation of HBPs.⁷ It has been argued that percentage arrangements are responsible for much of the rapid growth in the use of ancillary services in hospitals and in HBPs' earnings.⁸ Proposals for Medicare-Medicaid reimbursement reform submitted by Senator Talmadge (95th Congress, S. 1470) would effectively eliminate percentage compensation arrangements. Although we do not

investigate these allegations directly, we do ask whether Medicare and Medicaid have had any direct impact on the presence of incentive compensation in teaching hospitals and for HBPs.

The next section of this paper develops a theory of the choice between salary and incentive compensation. Unlike earlier theoretical analyses of contractual arrangements, which have focused on the implications of risk, imperfect information, and the cost of supervision,⁹ our theory highlights the effects of variations in prices of hospitals' and physicians' outputs. As such, the theory suggests that government policies which change medical care prices will have implications for the choice of compensation arrangements.

The paper's third section describes empirical tests of our model. We use data from two hospital surveys to estimate an equation explaining the percentage of a hospital's physicians on salary. One survey, conducted by the American Hospital Association (AHA) in 1973, contains data for a sample of all short-term, nonfederal general hospitals.¹⁰ The second survey, conducted by the Institute of Medicine (IOM) in 1975, is limited to teaching hospitals.¹¹ However, these data provide information on the extent of hospitals' teaching activities and revenues from different sources.

The paper's final section summarizes the results of the empirical analysis and draws implications for public policy. In general, the empirical results are quite consistent with theoretical expectations. Salary arrangements are less frequent where the price of physicians' patient care services is high. However, grants, which are usually associated with nonpatient care activities or charity care, have the opposite effect. Finally, the Medicaid program, through its relatively less generous reimbursement for physicians' services than for inpatient hospital expenses, encourages the frequency of salary arrangements.

II. THEORY

This section begins with a general model of compensation arrangements between physicians and hospitals. Once the comparative statics results have been assessed, we discuss some pertinent institutional features and implications for empirical analysis.

There is one input, physician time, in our model. To keep matters simple, we consider a single representative physician. Results can readily be generalized to more than one doctor. The physician's total work hours are fixed at T . Each hour of work at patient care yields a unit of output. (The same argument applies to effort even though we refer to hours here.)

We assume that the hospital has the following objective function:

$$(1) \quad U = U(X, \Pi)$$

where X = nonpatient time of physicians

Π = net income.

Physicians' nonpatient care time is devoted to teaching, research, and administration. Hospitals value these activities for reasons of status and prestige, or because the presence of a teaching program increases the perceived quality of the hospital.¹² They seek a profit to subsidize the parent medical school, to support unfunded research and other professional activities of the medical staff, or to build up a reserve for contingencies.

Revenue (R) is obtained from gifts and grants (G), from selling physicians' patient care services, and from hospitalization insurance coverage of physicians' salaries (S). The last two sources of revenue reflect the unique structure of reimbursement for care provided in hospitals: physicians' services, billed on a fee-for-service basis, are covered by medical-surgical insurance, while physicians' salaries are generally considered reimbursable costs to be covered by hospitalization insurance.¹³

We assume that the hospital is a price-taker in the market for medical care (an innocuous assumption that greatly simplifies the analysis). Exogenous supply and demand factors, including insurance for physicians' patient care services in the area in which the hospital is located, determine the going price (p). The share of the hospital's expenses which it expects to collect is represented by the parameter k ($0 < k \leq 1$). This incorporates the effects of the extent and depth of hospital insurance coverage as well as the hospital's collection rate from uninsured patients.¹⁴ The hospital's revenue equation, then, can be written

$$(2) \quad R = p(T-X) + kS + G.$$

Hospital costs, in our one-input, one-output model, consist of physicians' compensation (C) which, in turn, takes two forms: salary and incentive compensation. For clarity in the following discussion, we define salary as a lump-sum payment independent of physicians' allocation of time. Incentive compensation is paid at the rate of f dollars per unit of patient care. Since profits equal revenues minus costs, we can write the hospital's profit function as

$$(3) \quad \Pi = (p-f)(T-X) + G - (1-k)S.$$

We assume that physicians (like the hospital) value nonpatient care activities. It is reasonable, then, to postulate that physicians would be willing to accept less compensation in return for the nonmonetary benefits of more nonpatient care time; turning this relation around, we postulate that compensation is an increasing function of patient care time:

$$(4) \quad C = C(T - X; Z)$$

where Z is any exogenous factor shifting the compensation schedule.

The compensation schedule plays a role in this theory analogous to the wage rate in ordinary labor-demand theory, but, unlike the scalar wage rate, it offers the hospital a "menu" of compensation rates corresponding to different allocations of a physician's time.

The hospital is faced with the following decision. It likes X , but it also like Π . How should it structure the physician's compensation to maximize its welfare? The intuitive answer is to offer a mixture of salary and incentive compensation which induces physicians voluntarily to produce the optimal (utility-maximizing) level of output.

The answer is illustrated by Figure 1, where the upward-bending line represents the physician's compensation schedule (equation(4)). Let the hospital's desired output of patient care be $(T-X)^*$. Then, provided that the compensation schedule is strictly convex, the physician will voluntarily locate at point $(T-X)^*$ if and only if the hospital pays S^* salary and a wage rate equal to the slope of $C(\cdot)$ at $T-X^*$. Higher desired outputs of patient care (points to the right of $(T-X)^*$) require a salary-incentive mix weighted more heavily toward incentives, and vice versa.

In addition to depicting the equilibrium of our model, Figure 1 also shows that the model is related to the hedonic demand theory of Lancaster.¹⁵ Our compensation schedule is an hedonic wage equation for the undesirable on-the-job attribute of more patient care time. If all physicians were identical, then $C(\cdot)$ would simply be the equation of a representative physician's indifference curve; otherwise, $C(\cdot)$ is an equilibrium locus of the sort described by Rosen.¹⁶

We may formally analyze the hospital's decision by writing the functions for salary and the incentive rate:

$$(5) \quad S = S(T-X; Z)$$

$$(6) \quad f = f(T-X; Z)$$

where $S_X > 0$ and $f_X < 0$. Substituting (3), (5), and (6) into (1) and differentiating with respect to the choice variable (X), one obtains the first order condition:

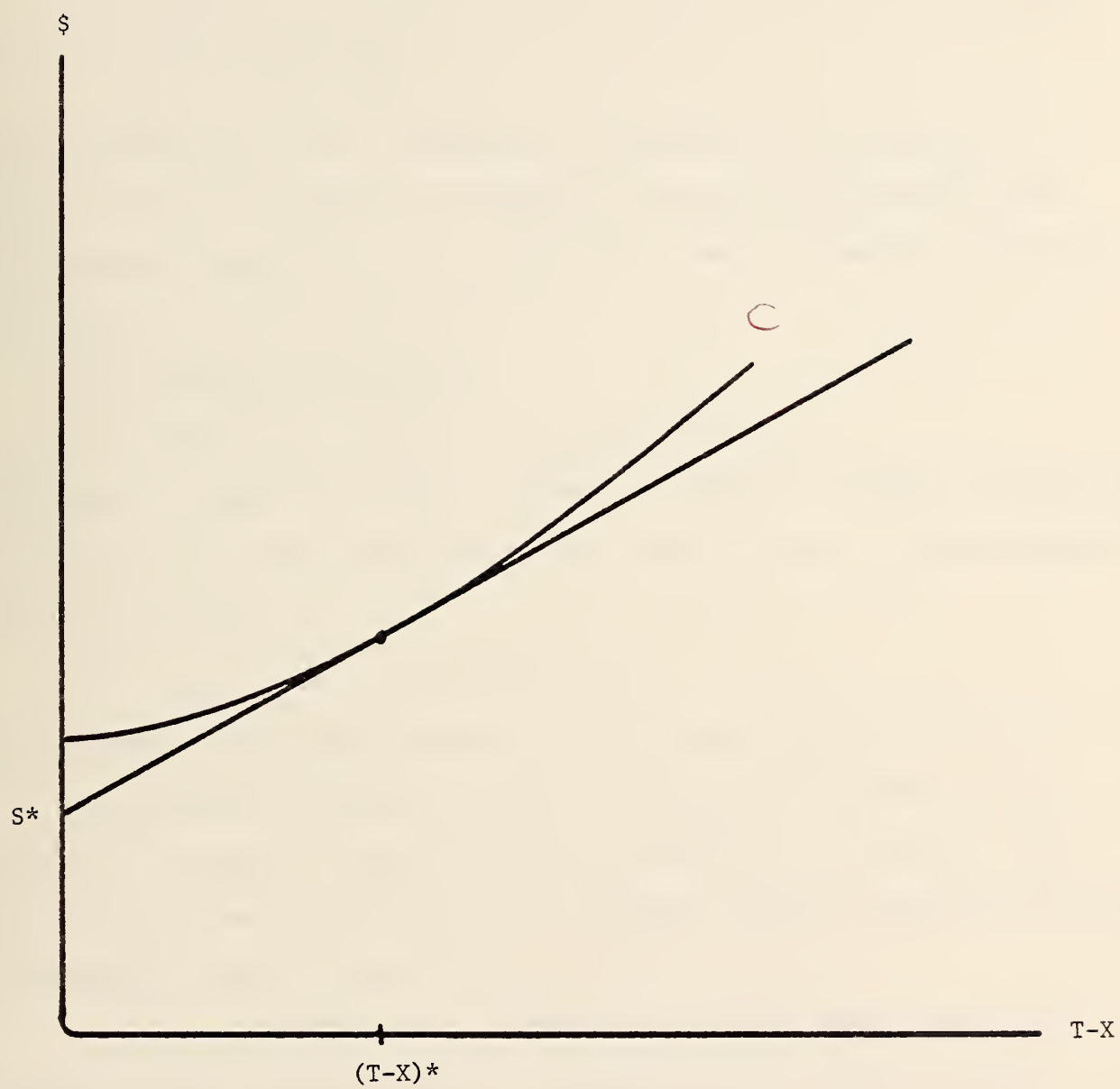


Figure 1

$$(7) \quad \partial U / \partial X = U_X + U_{II} \Pi_X = 0$$

$$\Pi_X = -p + f + kS_X < 0. \quad 17$$

An interpretation of this condition is that the loss to the hospital in revenue from moving toward more nonpatient care activity exceeds the gain from reduced compensation, i.e., the hospital produces less than the profit-maximizing amount of patient care.

The second order condition is

$$(8) \quad \partial^2 U / \partial X^2 = U_{XX} + 2U_{XII} \Pi_X + U_{III} \Pi_X^2 + U_{II} \Pi_{XX} < 0,$$

which must be negative to insure a maximum. A functional form of the compensation function which satisfies equation (8) (and which also helps to sign comparative statics derivatives) is

$$(9) \quad C = a_0 (T - X) + a_1 (T - X)^2 + a_2 Z$$

where the a 's are positive constants. In this case, $\Pi_{XX} = -2a_1(1 + k) < 0$.

We examine four comparative statics problems: an increase in gifts-grants, an increase in output price, an increase in k , the hospital's cost recovery rate, and a change in the "Z" variables (assumed to shift the physician's compensation schedule upward).

An increase in gifts-grants produces the straightforward result that desired patient care time falls and, consequently, the hospital reduces incentive payments and raises salary payments:

$$(10) \quad dX/dG = -(U_{XII} + U_{III} \Pi_X) / \Delta > 0,$$

$$\Delta = \partial^2 U / \partial X^2.$$

Under these circumstances, the model predicts that, for example, cutbacks of National Institute of Health (NIH) research funding or policy changes which reduce indirect payments would stimulate hospitals' efforts to provide

more patient care and cause them to structure teaching staff incentives accordingly.

The comparative statics derivative for the response of nonpatient care time to a change in price is:

$$(11) \quad dX/dp = -(U_{X\Pi} \Pi_p + U_{\Pi\Pi} X_{\Pi} \Pi_p + U_{\Pi} \Pi_{Xp})/\Delta \begin{matrix} < \\ > \end{matrix} 0.$$

Here, $\Pi_p = (T - X)$ and $\Pi_{Xp} = -1$. The first two terms are an income effect toward more nonpatient care time and the third is a substitution effect toward patient care. The net result is ambiguous; hence, an increase in the generosity of insurance coverage for physicians' services could conceivably lead to less reliance on incentive payments. If the substitution effect is larger, the "common sense" prediction applies: higher patient care reimbursement leads to greater reliance on incentives.

An increase in the cost recovery rate causes X to increase:

$$(12) \quad dX/dk = -(U_{X\Pi} \Pi_k + U_{\Pi\Pi} X_{\Pi} \Pi_k + U_{\Pi} \Pi_{Xk})/\Delta > 0.$$

In this case $\Pi_k = S$ and $\Pi_{Xk} = S_X$, which together unambiguously imply that the hospital should increase its reliance on salary compensation.

Now suppose that some factor causes the compensation schedule to shift upwards. This is analogous to an inward shift of the supply curve in ordinary labor theory. It could be caused by an exogenous decrease in the market area's physician-to-population ratio, a change in the "mix" of physicians away from those who provide hospital care, or a change in physicians' tastes toward more nonpatient care activities. (We ignore the feedback effect from higher compensation to higher output price.)

The comparative statics derivative dX/dZ is, like dX/dp , ambiguous in sign:

$$(13) \quad dX/dZ = -(U_{X\Pi} \Pi_Z + U_{\Pi\Pi} \Pi_Z \Pi_X + U_{\Pi} \Pi_{XZ})/\Delta \begin{matrix} > \\ < \end{matrix} 0.$$

The first two terms are a negative income effect leading the hospital to choose more patient care. The last term is ambiguous because we do not know the sign

of Π_{XZ} ; however, if we assume the special non interactive form of equation (9), then $\Pi_{XZ} = 0$ and dX/dZ is clearly negative.

The situation is graphically portrayed in Figure 2, where the hospital moves from point (T-X)* to (T-X)**. The associated compensation method shifts toward a mix with more incentive compensation. Interestingly, in this case, salary may rise or fall. (It is shown here falling).

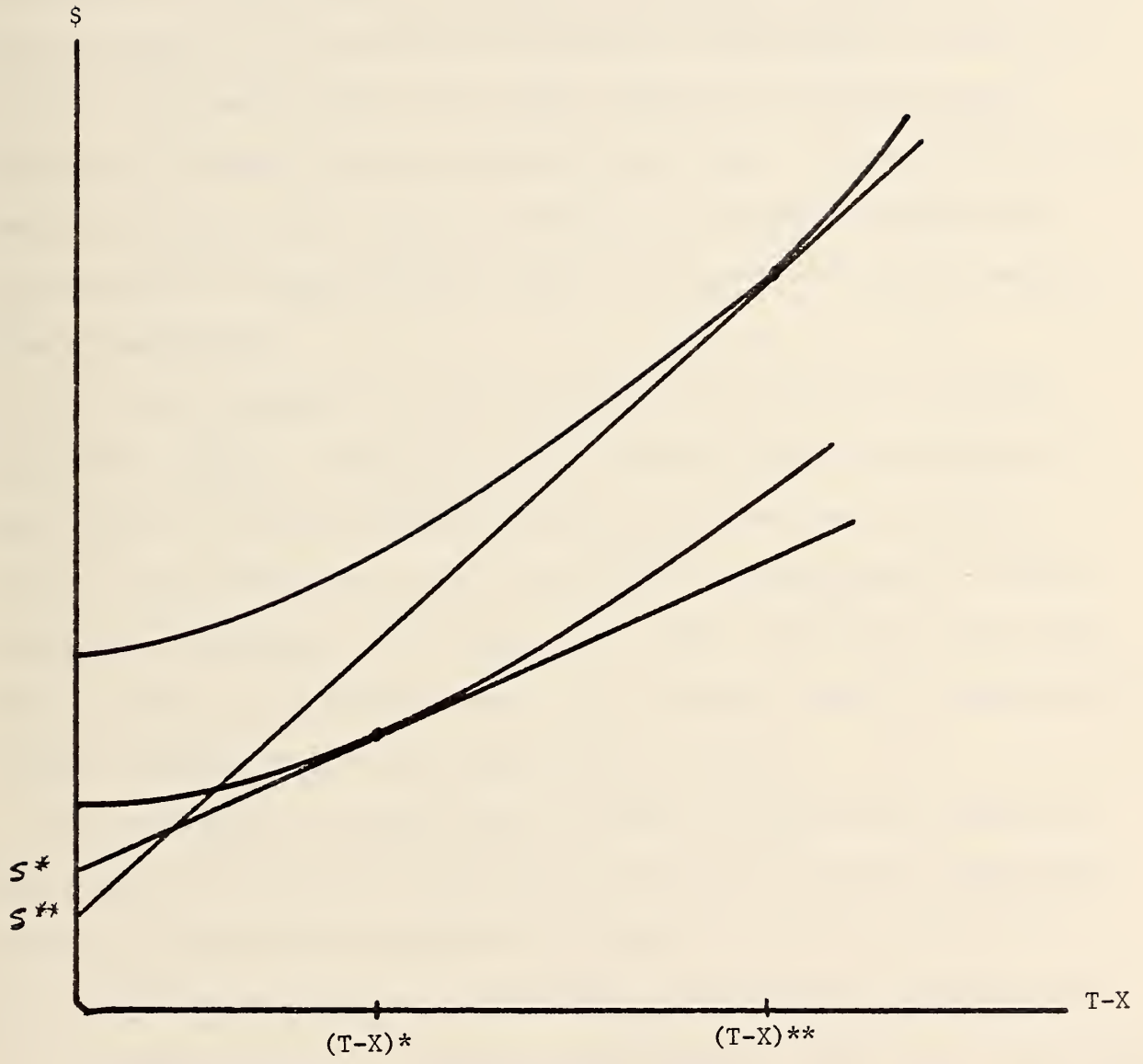


Figure 2

III. EMPIRICAL ANALYSIS

The theory developed in the previous section focused on the hospital's decision to provide some mix of patient care and nonpatient care. Given the desired output mix, the hospital determines the combination of salary and incentive compensation which will induce physicians to provide optimal quantities of patient care and nonpatient care hours. The comparative statics analysis focused on the effects of changes in exogenous variables on the desired amount of nonpatient care output, and thus on the relative amount of salary compensation.

This theory contrasts to the usual explanation of the choice between salary and incentive compensation, which relies on risks and the costs of supervision.¹⁸ The usual explanation postulates that, because incentive income is more variable and, hence, more risky, the preference for salary income will be stronger on more risky jobs. But, since salaried employees must be supervised to maintain their rate of output, incentive compensation may be more practical in jobs where supervision is costly.

The usual theory can explain many features of physicians' compensation. For example, hospital-based physicians are more often salaried than office-based physicians because supervision is less costly for the former group. They spend a larger fraction of their time in the hospital, and their tasks are more easily defined. In addition, some hospital tasks, e.g., the emergency room, require the continuous presence of physicians to meet risky demands. These physicians are likely to be compensated by salary.

A second reason for expecting certain physicians to be compensated by salary concerns the ease of defining output. For the physician giving

insurance physicals, for example, output is well-defined. When part of the physician's output encompasses option demand, as in the emergency room physician case, output is ill-defined, and piece-rate payments may be both inequitable and inefficient. Similarly, research and teaching outputs are much more difficult to define than "pure" patient care, and for this reason, salary should be more common in hospitals where these products are important.

We accept these features of the market and hold them constant in our empirical analysis. Our theory can then make predictions concerning the effects of variables previously unaccounted for. In particular, we believe that the price of output affects the choice of compensation methods, regardless of risk and the cost of on-the-job supervision. Furthermore, since price depends on government reimbursement policy, it follows that government policy affects the choice of physicians' compensation methods.

Following the theory, our empirical specification focuses on three types of variables: (1) factors influencing the price of physicians' services, (2) measures of hospitals' preferences for nonpatient care outputs, and (3) variables which influence the location of the physicians' compensation schedule. Data for the empirical analysis are taken from two independent surveys, described below. The opportunity to estimate the model twice with independent data offers a more robust test of our theory.

1. AHA-MEDORG Survey

The Survey of Medical Staff Organization (MEDORG) was administered to all non-federal U.S. hospitals by the American Hospital Association during December 1972-early 1973. Seventy-six percent of hospitals responded. The survey requested detailed information on contractual and compensation arrangements between the hospital and the medical staff.

The MEDORG Survey was merged with a longitudinal data file on 1,228 U.S. non-federal, short-term general hospitals covering the years 1970-75.¹⁹

This file contains data for constructing explanatory variables corresponding to the hospital's market area. All area variables are defined for 1974. Since most of the area variables change quite slowly, choice of a specific year between 1970 and 1975 is likely to have at most a minor impact on the estimated parameters.

2. IOM Survey

In April 1975 the Institute of Medicine (IOM) conducted a mail survey of all U.S. hospitals which had at least one physician training program. The survey requested data on basic characteristics of teaching hospitals (ownership, size, etc.), the hospital's financial characteristics, and the extent to which the hospital participated in graduate physician training. Approximately 1300 hospitals received questionnaires. The 900 respondents generally represent hospitals with larger, more active teaching programs. We limited the analysis to 709 non-federal, non-specialty hospitals, which were not affiliated with an osteopathic school.

3. Variable Specification

We first describe the variables constructed from the AHA-MEDORG survey. The variables from the IOM survey are conceptually identical but differ in actual construction because of differences in the formats of the two surveys. Differences between the surveys will be described after specification of the estimating equation.

Compensation arrangements are defined by two dependent variables, the proportions of full-time equivalent (FTE) hospital-based physicians and nonhospital-based physicians on salary (HBPSAL and NHBPSAL). Analyzing these groups of physicians separately controls for the effects of factors unique to the hospital-based specialties. Nineteen percent of the HBPs and six percent of the non-HBPs received salary compensation.

The theoretical model necessarily simplified many features of the medical care market by assuming only one input. In reality, of course, hospitals and physicians produce many outputs with different degrees and types of insurance coverage. In general, however, the model predicts that if the substitution effect dominates, factors associated with a high price for physicians' services should have a negative impact on the prevalence of salary compensation. Factors associated with generous insurance coverage of hospital costs should have the opposite effect, since physicians' salaries are generally considered reimbursable expenses.²⁰

In terms of generosity of payment for physicians' services, the private insurers (Blue Shield and commercial insurance) tend to rank highest, Medicaid lowest, with Medicare in between.²¹ Hence, if dX/dp is negative, our theory predicts that as the proportion of Medicaid patients rises, salary arrangements between hospitals and physicians should become more common.

There are other reasons for expecting that a high Medicaid proportion should be associated with a high proportion of physicians on salary. First, Medicaid patients are less likely to have a single physician as a usual source of medical care. Since the Medicaid patient may see a number of physicians for each medical problem, fee-for-service billing can become exceedingly complicated. Under fixed salary, physician compensation becomes part of the institution's cost pool and is billed to third parties in the same manner as other costs.

Second, Medicaid fee schedules for physicians' services are comparatively low. Medicaid reimbursement for inpatient services is less restrictive. Hence, where Medicaid patients represent an important proportion of the caseload, physicians may be better off on salary with Medicaid patients included in the inpatient cost pool.

Predictions regarding Medicare are less clear because of its intermediate association with the level of physicians' fees. However, both Medicare and Medicaid reimburse hospital expenses on a cost basis (although Medicare requires a deductible). This should have a positive impact on the percentage of physicians receiving salary. We predict, therefore, that Medicaid should have an unambiguous positive impact on salaried arrangements. The implications of Medicare reimbursement are less clear because of possibly off-setting effects. However, we expect its coefficient to be positive, though smaller in magnitude than the Medicaid coefficient. Variables representing Medicaid and Medicare are MCAID and MCARE, the proportions of hospitals' discharged patients who had Medicaid and Medicare coverage.

Other variables influencing reimbursement for physicians' services and hospitals' costs are defined for the hospital's county. Variables MD and Y represent the number of persons in the county per patient-care physician not employed by hospitals and real county per capita income, respectively.²² Both are expected to have positive impacts on p. High per capita income should also be associated with extensive hospital insurance coverage. Therefore, the expected effect of Y is ambiguous, while MD should have a clear negative impact on salaried arrangements.

Two variables, INSP and INSH, measure the "depth" of insurance coverage in the county for physicians' and hospitals' services, respectively. Each of these variables is an index constructed from household survey data of insurance coverage and premiums.²³ We expect INSP to have a negative sign and INSH a positive sign in the salary equations for both HBPs and non-HBPs.

Hospital's preferences for nonpatient care outputs are measured by several hospital characteristics. As noted above, physician output is less well-defined for option goods and nonpatient care activities. Other things equal, large hospitals are more likely to purchase physicians' nonpatient

care time for supervision.²⁴ To account for this (and other unspecified size effects), three binary hospital size variables are included: SIZE1 = 1 for hospitals with fewer than 100 beds; SIZE2 = 1 for hospitals with 100 to 249 beds; SIZE3 = 1 for hospitals with 250 to 399 beds (400-plus bed hospitals are the reference group).

State and local government hospitals are more likely to provide emergency room services than their voluntary and proprietary hospital counterparts.²⁵ For this reason, and possibly because they are constrained by civil service regulations, we expect government hospitals (GOVT) to rely more on salary compensation. Proprietary hospitals are identified by the binary variable PROP with voluntary hospitals the reference category.

Teaching and research-oriented hospitals are identified by binary variables: TEACH = 1 for hospitals with major medical school affiliations; LTEACH = 1 for hospitals without major medical school affiliations but with at least one approved internship or residency program; RES = 1 for hospitals with at least one medical staff member with a research project funded from external sources. Positive coefficients are expected on all three variables.

The "Z" variables encompass factors assumed to shift the physician's compensation schedule. Where general practitioners constitute a larger fraction of the physician stock, comparatively few physicians should be available for hospital work. Moreover, preliminary descriptive analysis indicated that salaried arrangements are much more common in the largest metropolitan areas. One interpretation of this relationship is that physicians in metropolitan areas have greater preferences for nonpatient care outputs such as teaching, research, and community outreach. Alternatively, this association could reflect the fact that metropolitan hospitals serve greater proportions of inner city populations, and hence the option demand notion may be applicable here. Variables GP, proportion of physicians who are general practitioners

not employed by hospitals, and DENS, population density, represent these influences. Both are defined for the hospital's county.

Variable definitions for the IOM data file differ in several respects. First, the definition of the dependent variable is simply the percentage of physicians on the hospital's medical staff who receive some salary compensation (PMDSAL). The questionnaire does not permit conversion to full-time equivalents or the separation of physicians who are wholly and partially salaried. Second, MCAID and MCARE are defined as the percentage of hospitals' revenues from Medicaid and Medicare. Third, we define a new variable which measures the percentage of hospital revenue from nonpatient care sources (NPAREV). This corresponds to the grants variable, G, in the theoretical model. NPAREV should have a positive effect on the prevalence of salary compensation. Fourth, the categorical variables TEACH and LTEACH are not meaningful for the IOM data, since all the hospitals are teaching institutions. Therefore, we construct a continuous variable, PERTEACH, to measure the extent of educational activity. PERTEACH is the percentage of the hospital's medical staff defined by the hospital as teaching physicians. Finally, it should be noted that the IOM hospitals differ from the MEDORG hospitals in several other respects: there are no hospitals in the smallest size category (SIZE1), no proprietary hospitals, and no hospitals outside of SMSAs.

Table 1 summarizes the variables and their definitions in the two data files.

Table 1
Variable Definitions, MEDORG and IOM Data Files

| <u>Variable Name</u> | <u>MEDORG DEFINITION</u> | <u>IOM DEFINITION</u> |
|----------------------|--|--|
| HBPSAL | proportion of FTE hospital based physicians on salary | -- |
| NHBPSAL | proportion of FTE nonhospital based physicians on salary | -- |
| PMSAL | -- | proportion of medical staff receiving salary |
| SIZE1 | LT 100 beds | NA |
| SIZE2 | 100 to 249 beds | SAME |
| SIZE3 | 250 to 399 beds | SAME |
| PROP | proprietary hospital | NA |
| GOVT | nonfederal, government hospital | SAME |
| TEACH | major medical school affiliation | -- |
| LTEACH | teaching program but no medical school affiliation | -- |
| PERTEACH | -- | proportion of medical staff designated teaching physicians |
| RES | at least 1 staff member with outside-funded research | -- |
| NPAREV | -- | percent of revenue from nonpatient care sources |
| MCAID | percent of discharged patients with Medicaid coverage | percent of revenue from Medicaid |
| MCARE | percent of discharged patients with Medicare coverage | percent of revenue from Medicare |
| INSP* | depth of insurance coverage for nonhospital services | SAME |
| INSH* | depth of insurance coverage for hospital services | SAME |
| MD* | population per patient-care physician <u>not</u> employed by hospitals | SAME |
| Y* | real per capita income | SAME |
| DENS* | population per square mile | SAME |
| GP* | proportion of nonhospital physicians who are general practitioners | SAME |

*defined for hospital's county

NA= Not Applicable

4. Results

Table 2 presents data from the MEDORG survey which describe the percent distributions of hospital- and nonhospital-based physicians by method of compensation. The distributions are broken down by bed size, form of control, and medical school affiliation. As can be seen, a much higher proportion of hospital-based physicians are paid by salary. This is true regardless of the number of beds or form of control. Teaching hospitals also have a higher proportion of staff physicians on salary than do nonteaching hospitals. Proprietary hospitals are the least likely to maintain salary arrangements with their staff physicians, while government hospitals (particularly teaching institutions) have higher proportions of physicians on salary. These patterns are highly consistent with our theory of how the nature of the product and the hospital's control influence the choice of compensation method. Assessing the impacts of variations in prices and grants requires turning to the regression results.

Table 3 presents regressions based on MEDORG data. The regressions explain one-fifth and one-quarter of the variation in HBPSAL and NHBPSAL, respectively. Among the hospital characteristics variables, the most distinct relationships are obtained for the TEACH and RES. Other factors constant, a major medical school affiliation and some funded research raises the proportion of salaried HBPs by 0.13; the corresponding increase for non-HBPs is 0.10. Government hospitals have a higher proportion of salaried non-HBPs than voluntary hospitals; however, government ownership is insignificant in the HBPSAL equation. The fraction of HBPs on salary in proprietary hospitals is about 0.09 and 0.08 lower than for voluntaries and for government hospitals, respectively. The

Table 2

Hospital-Physician Compensation Arrangements for Hospital-Based and Non Hospital-Based Physicians

| | Number of Beds | | | | | | | | | | | |
|----------------------------------|----------------|-------------------------------|---------------|----------|-------------------------------|---------------|----------|-------------------------------|---------------|----------|-------------------------------|---------------|
| | < 100 | | | 100-249 | | | 250-399 | | | > 400 | | |
| | % Salary | % Con-tract Other Than Salary | % No Contract | % Salary | % Con-tract Other Than Salary | % No Contract | % Salary | % Con-tract Other Than Salary | % No Contract | % Salary | % Con-tract Other Than Salary | % No Contract |
| Hospital Based Physicians | | | | | | | | | | | | |
| Voluntary | * | * | * | 31.0 | 42.3 | 26.8 | 21.8 | 42.2 | 36.0 | 23.0 | 41.0 | 36.0 |
| Teaching | 7.9 | 52.1 | 40.1 | 12.8 | 50.9 | 36.4 | 13.4 | 45.4 | 41.3 | 8.8 | 48.7 | 42.6 |
| Non-teaching | | | | | | | | | | | | |
| State government | * | * | * | * | * | * | 26.8 | 28.8 | 44.5 | 15.6 | 44.4 | 40.1 |
| Teaching | 33.4 | 26.2 | 40.1 | 12.5 | 52.3 | * | * | * | * | * | * | * |
| Non-teaching | | | | | | | | | | | | |
| Other governmental (non-federal) | * | * | * | 38.9 | 35.3 | 25.8 | 41.3 | 26.8 | 31.9 | 43.6 | 21.7 | 34.7 |
| Teaching | 3.7 | 54.8 | 41.5 | 8.8 | 60.4 | 30.8 | 9.5 | 50.8 | 39.7 | 0.3 | 15.6 | 84.1 |
| Non-teaching | | | | | | | | | | | | |
| Proprietary | 13.8 | 46.4 | 39.8 | 15.8 | 40.1 | 44.1 | * | * | * | * | * | * |
| Chain | 5.4 | 44.7 | 50.1 | 5.8 | 43.5 | 50.8 | * | * | * | * | * | * |
| Other | | | | | | | | | | | | |
| Nonhospital Based Physicians | | | | | | | | | | | | |
| Voluntary | * | * | * | 13.1 | 3.7 | 83.2 | 6.1 | 4.1 | 90.0 | 8.8 | 4.9 | 86.3 |
| Teaching | 2.0 | 4.6 | 93.5 | 2.8 | 3.8 | 93.4 | 2.6 | 3.3 | 94.1 | 1.7 | 4.2 | 94.1 |
| Non-teaching | | | | | | | | | | | | |
| State government | * | * | * | * | * | * | 16.6 | 23.2 | 60.2 | 9.4 | 29.6 | 61.1 |
| Teaching | 52.4 | 11.1 | 36.5 | 15.3 | 8.3 | 76.5 | * | * | * | * | * | * |
| Non-teaching | | | | | | | | | | | | |
| Other governmental (non-federal) | * | * | * | 30.8 | 17.4 | 51.8 | 36.5 | 1.3 | 62.2 | 37.5 | 2.1 | 60.4 |
| Teaching | 1.6 | 5.9 | 92.5 | 2.3 | 4.2 | 93.5 | 4.6 | 6.6 | 88.8 | 1.7 | 4.1 | 94.2 |
| Non-teaching | | | | | | | | | | | | |
| Proprietary | 10.4 | 10.5 | 79.2 | 2.5 | 3.5 | 94.0 | * | * | * | * | * | * |
| Chain | 10.6 | 6.5 | 92.9 | 0.6 | 3.4 | 96.1 | * | * | * | * | * | * |
| Other | | | | | | | | | | | | |

* Five or fewer hospitals

estimated coefficients for LTEACH, though positive, are insignificant at conventional levels. In neither regression does size have a statistically significant impact on the proportion of salaried physicians.

The parameter estimates on MCAID, MCARE, and INSP are readily interpretable. Where Medicaid patients predominate, the proportion of salaried physicians is substantially higher. In-depth private insurance coverage for physicians' services, measured by the variable INSP, can be expected to raise p . As demonstrated earlier, higher p leads to greater reliance on incentive compensation if the substitution effect dominates the income effect in equation (11). The physician insurance variable has a significantly negative impact on HBPSAL, but not on NHBPSAL. The Medicare patient proportion has no impact in either regression.

The negative signs of MD and Y coefficients in Table 3 also imply a dominant substitution effect. Presumably, increases in the county population-physician ratio and per capita income raise p which in turn encourages hospitals to produce more patient care. To accomplish this, they rely more on incentive compensation. (Some caution is indicated since the MD and Y parameter estimates are not statistically significant at conventional levels.)

The DENS and GP coefficients indicate that salary arrangements are more common for both HBP and non-HBP physicians in counties with high population density and a low proportion of general practitioners. We realize, however, that DENS may reflect a combination of influences.

Finally, the depth of hospital insurance coverage in the hospital's county (INSH) has positive and significant impacts on both HBPSAL and NHBPSAL. This result is consistent with our prediction of the impact of a change in k ,

Table 3 Empirical Results: MEDORG

| Variable | Means and Std. Devs. | | HBPSAL Regression | | NHBPSAL Regression | |
|----------|-------------------------|---------|-------------------------|----------|-------------------------|-----------|
| HBPSAL | 0.19 | (0.31) | -- | (--) | -- | (--) |
| NHBPSAL | 0.06 | (0.16) | -- | (--) | -- | (--) |
| SIZE1 | 0.19 | (0.39) | 0.018 | (0.039) | -0.016 | (0.020) |
| SIZE2 | 0.34 | (0.47) | 0.0049 | (0.038) | -0.018 | (0.017) |
| SIZE3 | 0.26 | (0.44) | -0.0099 | (0.029) | -0.022 | (0.015) |
| PROP | 0.10 | (0.30) | -0.092 ^a | (0.032) | -0.011 | (0.017) |
| GOVT | 0.15 | (0.36) | -0.013 | (0.027) | 0.099 ^a | (0.014) |
| TEACH | 0.26 | (0.44) | 0.070 ^a | (0.030) | 0.066 ^a | (0.015) |
| LTEACH | 0.09 | (0.29) | 0.021 | (0.034) | 0.022 | (0.018) |
| RES | 0.23 | (0.42) | 0.062 ^b | (0.026) | 0.035 ^a | (0.013) |
| MCAID | 0.11 | (0.10) | 0.41 ^a | (0.10) | 0.19 ^a | (0.05) |
| MCARE | 0.26 | (0.13) | 0.014 | (0.071) | 0.031 | (0.036) |
| INSP | 72.84 | (20.01) | -0.0028 ^a | (0.0007) | -0.00019 | (0.00035) |
| MD | 1.21 | (3.74) | -0.0063 | (0.0069) | -0.0016 | (0.0012) |
| Y | 4.25 | (10.65) | -0.018 | (0.016) | -0.013 | (0.007) |
| DENS | 4.36 | (9.82) | 0.0063 ^a | (0.0011) | 0.0042 ^a | (0.0005) |
| GP | 0.22 | (0.14) | -0.12 | (0.08) | -0.072 ^c | (0.042) |
| INSH | 178.02 | (35.92) | 0.0025 ^a | (0.0003) | 0.00030 ^c | (0.00017) |
| Constant | -- | (--) | -0.040 | (--) | 0.023 | (--) |
| | | | R ² =0.21 | | R ² =0.26 | |
| | | | R ² (C)=0.20 | | R ² (C)=0.25 | |
| | | | F(16,960)=15.9 | | F(16,960)=21.6 | |

Key: HBPSAL=proportion of full-time equivalent hospital-based physicians on salary; NHBPSAL=proportion of full-time equivalent non-hospital-based physicians on salary; SIZE1, SIZE2, SIZE3=1, respectively, if hospital has < 100, 100-249, 250-399 beds; PROP=1 if ownership is proprietary; GOVT=1 if ownership is state-local government; TEACH=1 if hospital has major medical school affiliation; LTEACH=1 if hospital has approved internship and/or residency program and no major medical school affiliation; RES=1 if hospital has at least one active medical staff member with outside funding for research; MCAID=proportion of hospital's patients discharged who had Medicaid coverage; MCARE=proportion of hospital's patients discharged who had Medicare; INSP=depth of private insurance coverage in county for non-hospital services; MD=county population per county patient care physician not employed by hospitals (in 000s); Y=real per capita income in county (in 000s); DENS=population per square mile in county (in 000s); GP=proportion of physicians in county included in denominator of MD who are general practitioners; INSH=depth of insurance coverage in county for hospital services; a=statistically significant at 1% level (two tail test); b=statistically significant at 5% level (two tail test); c=statistically significant at 10% level (two tail test).

which is positively related to the share of the hospital's costs covered by insurance. With more complete coverage for inpatient services, physician compensation is more easily accommodated as a hospital cost.

Table 4 reports regressions on the IOM data. The dependent variable in these equations is the percentage of physicians on the hospital's medical staff who receive some salary compensation. Equation 1 uses data from 165 teaching hospitals located in counties for which the two depth-of-insurance variables, INSP and INSH, are available. Equation 2 focuses strictly on hospitals' revenue and teaching characteristics. Eliminating INSP and INSH more than doubles the available sample size to 338 hospitals.

Preliminary regressions indicated that several variables (GOVT, SIZE2, SIZE3, MD, Y, DENS and GP) were both jointly and individually insignificant ($F(13,151) = .4$).²⁶ Therefore, the coefficients of these variables are not reported here. The coefficients in Equation 1 are qualitatively similar to those estimated with the AHA-MEDORG data. The percentage of revenue from Medicare (MCARE) is not statistically significant, while the percentage of Medicaid revenue (MCAID) has a positive and significant impact as predicted. The two depth of insurance variables, INSP and INSH, also enter with the expected signs, although only INSH is significant. These results are also consistent with the notion that high fees for physicians' services lead to less salary compensation. Conversely, more coverage for hospital care has the opposite effect. The two unique variables in the IOM data, percentage of nonpatient care revenue (NPAREV) and percentage of teaching physicians (PERTEACH) also have the expected signs. These variables measure grants made to the hospital and the hospital's preference for non patient care activities.

In spite of the differences among the hospital samples, the IOM results are consistent with the AHA-MEDORG findings. Focusing only on teaching institutions does not alter any of the basic qualitative findings. In addition, the IOM equations underline the importance of nonpatient care revenues and activities as determinants of the hospital's compensation method.

Table 4

Empirical Results: IOM

| Variable | Equation 1 | | Equation 2 | |
|----------|---------------------|---|---------------------|---|
| | Mean (Std. Dev.) | Regr. Coeff. (Std. Error) | Mean (Std. Dev.) | Regr. Coeff. (Std. Error) |
| PSALMD | 0.18 (0.24) | -- | 0.22 (0.29) | -- |
| MCARE | 0.30 (0.10) | -0.114 (0.194) | 0.28 (0.11) | -0.201 (0.133) |
| MCAID | 0.11 (0.11) | 0.905 ^a (0.183) | 0.11 (0.11) | 0.348 ^a (0.129) |
| NPAREV | 0.08 (0.12) | 0.142 (0.153) | 0.11 (0.17) | 0.528 ^a (0.090) |
| PERTEACH | 0.26 (0.28) | 0.241 ^a (0.057) | 0.28 (0.30) | 0.359 ^a (0.045) |
| INSP | 70.46 (19.71) | -0.0014 (0.0011) | -- | -- |
| INSH | 178.54 (33.20) | 0.0014 ^b (0.0006) | -- | -- |
| (N) | (165) | R ² (C)=0.31 F(6,158)=13.11 | (338) | R ² (C)=0.32 F(4,333)=39.84 |

Key: PSALMD = percent salaried physicians
 MCARE = percent Medicare revenues
 MCAID = percent Medicaid revenues
 NPAREV = percent nonpatient care revenues
 PERTEACH = percent teaching physicians
 INSP = depth of insurance for physicians' services
 INSH = depth of insurance for hospitals' services

a = statistically significant at 1% level (two-tail test)

b = statistically significant at 5% level (two tail test)

IV. SUMMARY AND CONCLUSIONS

The objective of this paper was to investigate the arrangements used by hospitals to compensate physicians. In spite of the physician's key role in hospital decision making, there has been surprisingly little research on this issue. This topic is also of interest because it contributes to understanding the more general problem of professional compensation arrangements and because it is relevant to current policy issues, i.e., Medicare reimbursement of teaching and hospital-based physicians.

Earlier theoretical analyses of contractual arrangements have focused on the implications of risk, imperfect information, and the cost of supervision. The model developed here takes these results as given and concentrates on the consequences of changes in prices of medical care and grants to hospitals. In general, the model predicts that increasing the price of medical care induces the hospital to provide more patient care services. It does this by increasing the amount of incentive compensation for staff physicians. An increase in grants (nonpatient care revenues) has the opposite effect.

Empirical tests of the model used data from two hospital surveys, one conducted by the American Hospital Association in 1973 and the other by the Institute of Medicine in 1975. The former included all U.S. hospitals while the percentage of physicians receiving salary compensation. Independent variables measured hospitals' preferences for nonpatient care activities and revenues from nonpatient care sources, factors affecting the price of physicians' services and the reimbursement of hospitals' costs, and shift factors in the physician's compensation schedule.

In general, the empirical results based on the two data files are consistent with each other and with the implications of the theoretical model. Variables associated with high prices for physicians' services (low MCAID, high MD,

Y, and INSP) all have a negative impact on the percentage of salaried physicians. Conversely, nonpatient care variables (teaching, research, and high nonpatient care revenues) have a positive association with salary compensation.

Of particular interest for policy purposes are the coefficients of the Medicare and Medicaid variables, MCARE and MCAID. The insignificance of MCARE suggests that cost reimbursement of hospitals per se is not a factor influencing the choice of compensation method (although the extent of insurance coverage for hospital services, measured by INSH, is). Since MCAID enters with a positive and highly significant coefficient in all equations, this suggests that public policy affects compensation arrangements through its impact on the price of physicians' services. Another implication is that prohibiting percentage-of-revenue arrangements for HBPs will simply lead to more fee-for-service billing, rather than salary, as long as physicians' fees continue to be high. Thus, if it is thought that salaried compensation is in some sense "better" (which in the context of our model means the delivery of fewer patient care services) the appropriate objective for public policy would be to constrain physicians' fees. Finally, the insignificance of MCARE in both the teaching hospital and nonhospital-based physician equations also suggests that incentives for double billing by teaching physicians may not be as great as implied by the proposed Section 227 regulations to the Social Security Act.

These findings and implications must, of course, be treated as tentative because of the quality of the underlying data. More complete information is needed on physicians' full compensation (including fringe benefits), on insurance coverage, and on prices for physicians' and hospitals' services. A better understanding of the physician-hospital interaction should contribute to developing public policies for attaining improved access to medical care at reasonable costs.

Footnotes

¹There are a few exceptions. See Pauly and Redisch (1973), Feldman (1976), Harris (1977), and Redisch (1978).

²See Jacobs (1974) and Davis (1972) for reviews of alternative hospital theories.

³Sloan (1974), Pauly (1970), Lee and Hadley (1979).

⁴Gibson and Fisher (July 1978), p.6.

⁵Other possibilities include percentage of gross departmental revenue, percentage of net departmental revenues, salary only, and salary plus percentage of revenues.

⁶See Knapp and Butler (1979). The potential for this form of double billing arises because of the dual treatment by most insurance plans of hospitals' and physicians' services. Medicare, most Medicaid programs, and half of the Blue Cross plans treat salaries paid to physicians for educational activities as allowable expenses under reasonable cost reimbursement. At the same time, physicians are permitted to submit separate bills for identifiable services provided to their patients.

⁷See Steinwald (1979) for a discussion of trends in the compensation of HBPs.

⁸See Arthur Andersen (1977) and Redisch (1978).

⁹See Markusen (1979) or Stiglitz (1975) for examples.

¹⁰American Hospital Association (1973).

¹¹Institute of Medicine (1976).

¹²See Newhouse (1970) or Feldstein (1971) for examples of hospital objective functions which include quality of care.

¹³In reality, there is not a strict one-for-one correspondence between fee-for-service billing of physicians' service and fee-for-service compensation of physicians. The hospital or a medical service plan may collect fees charged at price p and compensate staff physicians under any combination of incentive, f , and time, S , methods. We abstract from the intermediary function of the hospital for simplicity.

¹⁴Extent refers to number of people with hospital insurance while depth may be thought of in terms of how much of the bill is covered. Together, these factors determine how much of a hospital's expenses will be covered by insurance. Note that this parameter does not distinguish between cost reimbursement, charge reimbursement, or other payment methods.

¹⁵Lancaster (1966).

¹⁶Rosen (1974).

¹⁷Several corner solutions for this maximization problem are possible, for example, $S = 0$ and $p = f$ define fee-for-service compensation. We concentrate our attention here on interior solutions. We also use the constraint $S + f(T-X) = C(\cdot)$, from which it follows that $S_X = C_X + f - f_X(T-X)$. But $-C_X = f$ so $S_X = -f_X(T-X)$. This equality is used to simplify the first-order condition.

¹⁸See Footnote 9.

¹⁹The longitudinal data file is described by Sloan and Steinwald (1980).

²⁰A hospital's revenues are comprised of funds from cost-based and charge-based payers. The latter includes uninsured patients and patients with commercial insurance, which is generally less generous than insurance which pays the hospital's costs. According to Berman and Weeks (1979), charges tend to be set in order to make up the difference between cost-based revenues and total expenditures. If the proportion of cost-based revenue is low, then hospitals should prefer to keep the costs of physicians' services out of their accounts by having physicians bill separately on a fee-for-service basis.

²¹Sloan, Cromwell, and Mitchell (1978), p. 89.

²²For a discussion of the cost-of-living deflator, see Sloan and Steinwald (1980).

²³See Sloan and Steinwald (1980) for details of the construction of INSP and INSH.

²⁴Sloan (forthcoming).

²⁵See, for example, Roos et al. (1974).

²⁶

We suspect that this is due to the significant differences in the nature of the IOM sample hospitals compared to the AHA-MEDORG hospitals. Comparing mean values of some of the regression variables shows some striking differences: 60 percent of the IOM hospitals are in the largest size category, compared to 20 percent of the AHA-MEDORG hospitals; population per square mile and population per office-based physician are much higher in the IOM sample. In general, the IOM hospitals are much larger and much more likely to be located in large urban areas.

APPENDIX 1

A COMPARISON OF INFORMATION
FROM TWO SURVEYS ON PHYSICIANS' COMPENSATION METHODS

APPENDIX 1

The purpose of this appendix is to compare the data on physician compensation methods drawn from the IOM and MEDORG surveys and to provide additional information on the structure of compensation methods in teaching hospitals. For the sake of simplicity, the theoretical and empirical analyses reported in the body of the text focused on two prototype compensation methods: salary (time) and fee-for-service (incentive) compensation. In fact, compensation arrangements between hospitals and their staff physicians can assume a wide variety of forms. While the dichotomy of incentive versus non-incentive is useful in illustrating major differences in behavioral influences under different reimbursement methods, virtually every hospital-physician compensation arrangements used by a given hospital in reimbursing physicians in one department may differ substantially from those used in another department. Even within the same department, some physicians may be reimbursed with one compensation method while other physicians are reimbursed under a different method.

Although the specific reimbursement method adopted by a particular hospital may be unique, compensation arrangements can generally be classified into one of four categories: fee-for-service, percentage arrangements, salary only, and combinations of the first three. Straight salary arrangements represent the only compensation method that does not include an incentive component. Both percentage and fee-for-service arrangements include financial incentives for physicians to produce more output than under salary only. Combination arrangements usually include salary plus incentive, with the incentive component in effect at the margin.

Under salary only arrangements, hospital staff physicians are generally regarded as hospital employees. The salaried physician receives a fixed amount of income from the hospital for services rendered over a period of time. While the physician's income is independent of the level of services provided, it is conceivable that the salary package includes a floor on the minimum number of services to be provided. Salaried physicians may also be more likely than physicians in non-salaried positions to receive additional benefits in the form of malpractice insurance, paid vacation, and pension contributions.

Percentage arrangements represent a second major category of compensation arrangements. Until recently, percentage arrangements were the most common method of reimbursing physicians in the specialties of radiology and pathology. Under this form of compensation, physicians receive a stipulated percentage of department revenue. The stated percentage may apply to either gross revenue or net department revenue with the percent of gross revenue being the more popular of the two. Gross revenue may exclude bad debts, charity and professional courtesies. Under percent-of-gross payment methods, physicians do not directly assume liability for the costs of inputs used in the provision of services. Rather, the hospital maintains a responsibility to assure the efficient use of inputs. Net department revenue is calculated by deducting from the adjusted gross revenue direct expenses, depreciation of equipment, and certain indirect expenses incurred in the provision of patient services. Because expenses are deducted first, physicians with percentage of net arrangements have an incentive to use hospital provided inputs in an economically efficient manner.

Fee-for-service arrangements represent the most common form of compensation arrangement between hospitals and their staff physicians. Under the fee-for-service method either the hospital or the physician may bill for the professional component of the services rendered. If the hospital bills, physicians are often reimbursed by the hospital on the basis of a negotiated fee schedule. An extreme form of fee-for-service is the lease arrangement whereby physicians lease equipment and space from the hospital. The physician or physician group then bills the patients for services provided and reimburses the hospital for the costs of the inputs.

Combination arrangements often guarantee the physician a minimum salary and also include an income component based on revenue generated or on the number of services provided. Assuming most physicians under combination arrangements generate enough revenue to cover their salary guarantee, combination arrangements are generally equivalent to incentive arrangements in terms of effects on physician behavior. However, in some specialties combination arrangements may also place a lid on the amount of income which the physician can receive in a given year. Under these circumstances the physician has no incentive to generate additional revenue beyond the point at which he/she receives the maximum allowed.

In the remainder of this section, we will provide information on the prevalence of various compensation methods within and among U.S. short-term general hospitals. Data collected in the Institute of Medicine's 1975 Survey of Teaching Hospitals (IOM Survey) and the American Hospital Association's Survey of Medical Staff Organization (MEDORG Survey) conducted during 1973 provide information on the types of financial arrangements which hospitals maintain with their staff physicians.

A. Compensation Arrangements Reported in the IOM and MEDORG Surveys

Both the IOM and MEDORG surveys contained a series of questions regarding the compensation arrangements which hospitals maintained with their staff physicians. (See Appendix 2.) The IOM survey restricted the compensation question to physicians in the hospital based specialties of anesthesiology, radiology, pathology, and physical medicine. The MEDORG survey was directed to physicians in both the hospital-based specialties and the nonhospital-based specialties of family practice, internal medicine, surgery, pediatrics, and obstetrics/gynecology.

IOM survey hospitals were asked to report the number of full time equivalent physicians in each hospital-based specialty with which they maintained an independent contract. Those hospitals reporting the existence of a contract were then asked to identify whether the compensation method used was fee-for-service, salary, or a percentage arrangement. The questionnaire did not stipulate whether the contract needed to be written or whether both written and oral contracts between hospitals and the staff physicians were acceptable definitions of a contract. It is also not clear how hospitals having more than one arrangement with physicians in a given specialty or those with a combination arrangement would respond to the questionnaire. They may have refused to answer the question, responded according to the compensation method that most closely approximated the one actually in use, or reported more than one type of arrangement for a given specialty.

Information on the distribution of payment schemes for anesthesiologists, anatomical pathologists, clinical pathologists, and radiologists for the IOM survey hospitals are presented in Table A1. As can be seen, the predominant method of reimbursing anesthesiologists on contract was on a fee for service basis. Salary arrangements were the second most popular



form of compensation and percentage of gross was the least likely financial arrangement used to pay anesthesiologists. The majority of anatomical and clinical pathologists, however, were paid on a percentage-of-gross basis. The second most likely form of compensation reported was salary and about 16 percent of the hospitals reported using fee-for-service. The most popular form of reimbursement for radiologists was also percentage of gross (48.3 percent). About 36 percent of the hospitals reported fee-for-service arrangements and 21.7 percent had salary arrangements. Because it is possible for hospitals to use a combination of methods to reimburse physicians (combination of salary plus percent of gross) or to not use one method exclusively in reimbursing all physicians in a given specialty, the percent distribution of reimbursement methods sums to more than 100 percent.

The Institute of Medicine sample includes 709 hospitals. Of that total only between 16 and 32 percent (depending on specialty) reported having a specific contract with a group of physicians. Apparently the majority of hospitals do not enter into contracts with their physicians for the provision of hospital-based physicians' services. As stated earlier, it is not clear from the IOM Survey questionnaire whether the term contract refers only to a written contract with physicians or if it can also refer to a verbal contract. It is possible that hospitals which do enter into contracts with one group of physicians may also have a number of non contract physicians on staff within the same specialty. This possibility is not captured in the IOM Survey since questions on the number of non contract physicians by specialty were not included in the questionnaire.

MEDORG survey hospitals were asked to report both the number of contract and non contract staff that they had in each physician specialty. The definition of contract included both written as well as verbal arrangements between the hospitals and physicians. Of those staff on contract, the hospital was then asked to report the number of staff on full-time and-part time salary and the number of full-time and part-time staff on contracts other than straight salary. For the non contract staff, hospitals reported the number of physicians having primary affiliation with the reporting hospital and those with a principal affiliation at a hospital other than the reporting hospital. From the MEDORG survey it is thus possible to determine the number and percent of physicians in a given specialty having a particular compensation arrangement with the hospital as well as whether more than one compensation method existed for physicians in a given specialty.

Table 2 in the text presented the distribution of compensation method by hospital characteristics (bedsize, medical school affiliation, and form of control) for hospital based and non-hospital based specialties.

Tables A2 and A3 present data of a similar nature, but the sample is confined to teaching hospitals only and, in particular, only those MEDORG sample hospitals which also responded to the IOM survey. These tables indicate that a much higher proportion of hospital-based physicians have a contract with the hospitals than is true of the non hospital-based physicians. Hospitals are twice as likely to employ an HBP on a salary contract than a non-HPB. They are about five times as likely to have a non salary contract with an HPB than they are to have one with a non-HBP.

TABLE A1

PERCENT DISTRIBUTION OF HOSPITALS BY TYPE OF FINANCIAL ARRANGEMENTS
WITH PHYSICIANS

| | <u>Fee for Service</u> | <u>Percentage of Gross</u> | <u>Salary</u> | <u>Total*</u> |
|----------------------------|------------------------|--------------------------------|---------------|---------------|
| Anesthesiologists | 58.2 | 11.8 | 37.3 | 107.3 |
| Anatomical Pathologists | 16.8 | 50.3 | 40.6 | 107.7 |
| Clinical Pathologists | 15.7 | 51.2 | 37.1 | 103.9 |
| Radiologists | 35.7 | 48.3 | 21.7 | 105.7 |

38

* Total sums to more than 100 percent because hospitals which use a combination of methods to pay physicians may have checked more than one answer.

Source: IOM Survey

PERCENT OF FTE NHBPS ON SALARY AND ON CONTRACT OTHER THAN SALARY

| Medical School Affiliation and Type of Control | Percent on Salary | | | Percent on Contract Other than Salary | | |
|---|-------------------|---------|-------|--|---------|-------|
| | < 250 | BEDSIZE | | < 250 | BEDSIZE | |
| | | 250-399 | > 400 | | 250-399 | > 400 |
| Government | | | | | | |
| State | | | | | | |
| MEDSCH = Yes | ----- | 28.34 | 10.50 | ----- | 22.84 | 30.76 |
| MEDSCH = No | ----- | ----- | 10.87 | ----- | ----- | 34.60 |
| Local | | | | | | |
| MEDSCH = Yes | ----- | 25.43 | 29.18 | ----- | 11.19 | 8.72 |
| MEDSCH = No | ----- | 36.15 | 29.24 | ----- | 8.97 | 7.93 |
| | ----- | ----- | 29.03 | ----- | ----- | 10.65 |
| Voluntary | | | | | | |
| Church Related | | | | | | |
| MEDSCH = Yes | ----- | 3.39 | 5.30 | ----- | 2.51 | 2.74 |
| MEDSCH = No | ----- | 4.66 | 4.01 | ----- | 2.36 | 3.33 |
| | ----- | 1.05 | 7.63 | ----- | 2.80 | 1.67 |
| Other | | | | | | |
| MEDSCH = Yes | 19.77 | 8.29 | 10.05 | 4.13 | 3.67 | 5.42 |
| MEDSCH = No | 22.97 | 10.76 | 11.47 | 1.96 | 3.11 | 5.26 |
| | 15.06 | 5.23 | 5.99 | 7.32 | 4.38 | 5.88 |

Source: MEDORG Survey

Key: FTE = full time equivalent

NHBPS = nonhospital-based physicians

MEDSCH = medical school affiliation

PERCENT OF FTE HBPS ON SALARY AND ON CONTRACT OTHER THAN SALARY

40

| Medical School Affiliation and Type of Control | Percent on Salary | | | Percent on Contract Other than Salary | | |
|---|-------------------|---------|----------|--|---------|----------|
| | < 250 | BEDSIZE | | < 250 | BEDSIZE | |
| | | 250-399 | > 400 | | 250-399 | > 400 |
| Government | | | | | | |
| State | | | | | | |
| MEDSCH = Yes | ----- | 15.36 | 17.32 | ----- | 34.61 | 44.25 |
| MEDSCH = No | ----- | ----- | 14.30 | ----- | ----- | 43.27 |
| Local | | | | | | |
| MEDSCH = Yes | ----- | 42.49 | 38.75 | ----- | 32.89 | 21.46 |
| MEDSCH = No | ----- | 54.97 | 37.84 | ----- | 26.71 | 19.35 |
| | ----- | ----- | 40.98 | ----- | ----- | 26.64 |
| Voluntary | | | | | | |
| Church Related | | | | | | |
| MEDSCH = Yes | | 13.98 | 16.03 | | 44.69 | 41.21 |
| MEDSCH = No | | 13.71 | 15.72 | | 41.88 | 39.44 |
| | | 14.46 | 16.60 | | 49.82 | 44.40 |
| Other | | | | | | |
| MEDSCH = Yes | 35.49 | 27.42 | 27.80 | 33.50 | 35.58 | 42.06 |
| MEDSCH = No | 41.22 | 32.16 | 26.90 | 22.74 | 34.97 | 40.83 |
| | 27.06 | 21.56 | 30.36 | 49.37 | 36.35 | 45.58 |

Source: MEDORG Survey

Key: FTE = full time equivalent

HBPS = hospital-based physicians

MEDSCH = medical school affiliation

Hospitals controlled by local government have a higher percent of physician staff on contract than do hospitals under other forms of control. Among the voluntary hospitals those that are not church related have a higher percent of staff on salary than do the church related institutions. Voluntary hospitals are more likely to have HBPs on contracts other than salary than are the government hospitals. For non-HBPs contracts other than salary are more prevalent in government hospitals than in voluntary facilities.

Because the MEDORG and IOM surveys were conducted in different years and because the interpretation of the compensation questions could vary for the two surveys, we performed a cross-tabulation of IOM responses against those presented in the MEDORG survey. In addition, since the MEDORG survey did not specify percentage and fee for service arrangements in the compensation questions, it was desirable to determine how hospitals reporting either of these arrangements in the IOM survey would categorize their responses in terms of the alternatives provided in the MEDORG survey. The results of the cross-tabulation are presented in Table A4.

Since the surveys were conducted two years apart, exact correspondence between responses is unlikely. However, some of the differences are striking. The majority of departments reporting the existence of a salary contract in the IOM survey indicated that they used either salary compensation only or that they paid some department physicians on salary and others using a different compensation method. However, a sizeable minority of hospitals reporting salary arrangements in the IOM survey reported that their physicians were either not on contract or that some other reimbursement method was used. This may be due to the different definitions of contract in the two surveys as well as to changes in the compensation arrangements over time. The large majority of

TABLE A4
CONSISTENCY IN HOSPITAL RESPONSE TO THE IOM AND NEDORG SURVEY

| IOM Response (1974)* | NEDORG Response (1972) | | | | |
|---------------------------|------------------------|---|---------------------------------|---|---------|
| | Salary Only | Salary Plus Other Forms of Compensation | Contract Other Than Salary Only | No Contract and No Contract Plus Contract Other Than Salary | Missing |
| Anesthesiologists | | | | | |
| Salary | 5 | 9 | 4 | 9 | 14 |
| Fee-for-service | 9 | 5 | 14 | 21 | 15 |
| Percentage | 0 | 2 | 7 | 2 | 2 |
| No contract or missing | 48 | 54 | 64 | 205 | 228 |
| Clinical Pathologists** | | | | | |
| Salary | 19 | 8 | 7 | 2 | 11 |
| Fee-for-service | 4 | 0 | 5 | 5 | 6 |
| Percentage | 4 | 4 | 25 | 21 | 21 |
| No contract or missing | 110 | 66 | 111 | 78 | 217 |
| Anatomical Pathologists** | | | | | |
| Salary | 27 | 6 | 7 | 4 | 19 |
| Fee-for-service | 4 | 0 | 8 | 5 | 9 |
| Percentage | 4 | 11 | 35 | 16 | 12 |
| No contract or missing | 104 | 61 | 99 | 81 | 209 |
| Radiologists | | | | | |
| Salary | 11 | 9 | 6 | 4 | 20 |
| Fee-for-service | 5 | 11 | 28 | 20 | 19 |
| Percentage | 8 | 9 | 45 | 23 | 26 |
| No contract or missing | 52 | 54 | 86 | 109 | 178 |
| Total NEDORG Responses | 414 | 309 | 551 | 605 | 1,006 |
| | | | | | 2,385 |

** In the IOM survey, arrangements for clinical and anatomical pathologists are listed separately. The reference in the NEDORG survey is all pathologists.

* In the IOM survey, a small percent of hospitals reported more than 1 method of compensation. The hospital is counted once for each compensation method reported.

hospitals which reported having percentage arrangements with physicians in the IOM survey indicated that this arrangement was most consistent with contract arrangements other than salary. Fee-for-service arrangements in the IOM survey were about equally split between contract other than salary and no contract in terms of response to the MEDORG survey.

C. Variations in Compensation Methods within a Department

As demonstrated in Table A1, several of the hospitals in the IOM survey indicated that more than one compensation method was used to pay staff physicians in a given hospital department. In this section we will use data from the MEDORG teaching hospitals to determine the frequency with which multiple compensation existed in a single department. Table A5 presents summary statistics on the use of different compensation methods used by hospitals to pay physicians in eight departments.

As the table indicates, only 26.9 percent of the hospitals use an exclusive method of reimbursement (salary, contract other than salary, no-contract) to pay physicians in the internal medicine department. Five point four percent exclusively on a salary only basis, 1.5 percent use contracts other than salary and 20.0 percent do not have any of their internal medicine on a contract. The remaining 73 percent of the hospitals pay some of their internal medicine staff using one method and the remaining staff with other methods of reimbursement. The distribution of the compensation methods across physicians in the other non-hospital based departments is similar to that found for internal medicine.

The exclusive use of one reimbursement method however is more prevalent in each of the other non-hospital based specialties than it is in internal medicine.

TABLE A5

HOSPITAL DEPARTMENTS USING ONLY A SINGLE COMPENSATION METHOD

| Compensation Method | Internal Medicine | Surgery | Family Practice | Specialty | | | | Radiology | Pathology |
|--|----------------------|---------|--------------------|------------|---------------------------|----------------|------|-----------|-----------|
| | | | | Pediatrics | Obstetrics/ Gynecology | Anesthesiology | | | |
| Full-time salary only | 9 | 7 | 9 | 13 | 11 | 45 | 41 | 99 | |
| Part-time salary only | 2 | 6 | 5 | 4 | 2 | 9 | 9 | 10 | |
| Full & part-time salary | 14 | 10 | 0 | 13 | 9 | 6 | 23 | 27 | |
| Full-time other contract only | 5 | 4 | 1 | 4 | 5 | 72 | 106 | 106 | |
| Part-time other contract only | 2 | 2 | 1 | 2 | 7 | 10 | 35 | 25 | |
| Full & part-time other contract | 0 | 1 | 1 | 0 | 0 | 6 | 22 | 16 | |
| Non-contract primary affiliation here only | 68 | 114 | 135 | 120 | 151 | 160 | 69 | 34 | |
| Non-contract primary affiliation elsewhere | 6 | 5 | 12 | 11 | 8 | 4 | 2 | 1 | |
| Non-contract primary affiliation here & elsewhere | 18 | 61 | 51 | 59 | 57 | 25 | 14 | 5 | |
| Subtotal | 124 | 210 | 215 | 226 | 250 | 337 | 321 | 323 | |
| Total | 461 | 470 | 306 | 444 | 438 | 453 | 468 | 465 | |
| <u>Percent Distribution</u> | | | | | | | | | |
| Full-time salary only | 2.0 | 1.5 | 2.9 | 2.9 | 2.5 | 9.9 | 8.8 | 21.3 | |
| Part-time salary only | .4 | 1.3 | 1.6 | .9 | .5 | 2.0 | 1.9 | 2.2 | |
| Full & part-time salary | 3.0 | 2.1 | --- | 2.9 | 2.1 | 1.3 | 4.9 | 5.8 | |
| Full-time other contract only | 1.1 | .9 | .3 | .9 | 1.1 | 15.9 | 22.6 | 22.8 | |
| Part-time other contract only | .4 | .4 | .3 | .5 | 1.6 | 2.2 | 7.5 | 5.4 | |
| Full & part-time other contract | --- | .2 | .3 | --- | --- | 1.3 | 4.7 | 3.4 | |
| Non-contract primary affiliation here only | 14.8 | 24.3 | 44.1 | 27.0 | 34.5 | 35.3 | 14.7 | 7.3 | |
| Non-contract primary affiliation elsewhere | 1.3 | 1.1 | 3.9 | 2.5 | 1.8 | .9 | .4 | .2 | |
| Non-contract, affiliation here & elsewhere | 3.9 | 13.0 | 16.7 | 13.3 | 13.0 | 5.5 | 3.0 | 1.1 | |
| Subtotal | 26.9 | 44.7 | 70.3 | 50.9 | 57.1 | 74.4 | 68.6 | 69.5 | |

Source: MEDORG Survey

Thirty-eight percent of the hospitals did not have a contract with any of the physicians in their surgical departments. This was true of 65 percent of the hospitals with family practice departments, 50 percent for those with departments of pediatrics and 49 percent of the hospitals with departments of obstetrics/gynecology. Salary contract was the exclusive reimbursement method used in 5 percent of the surgical departments, 4.5 percent of the family practice departments, 7 percent of the pediatrics' departments and 5 percent of the departments in obstetrics/gynecology. Contracts other than salary were used exclusively by 1.5 percent of the surgical departments, one percent of the family practice departments, 1.4 percent of the pediatrics departments and 2.7 percent of the departments of obstetrics/gynecology.

The distribution of compensation methods for physicians in the hospital-based specialties is quite different from that in the non hospital-based specialties. In particular, the exclusive use of one reimbursement method is more prevalent in these specialties than in the non hospital-based specialties. Thirteen percent of the anesthesiology departments exclusively use a salary method of compensating their physicians compared to 15.6 percent of the radiology departments and 29.3 percent of the departments of pathology. Contracts other than salary are used exclusively by 19.4 percent of the anesthesiology departments, 34.8 percent of the radiology departments, and 31.8 percent of the pathology departments. Hospital departments which did not use a contract to reimburse any of their staff physicians accounted for 48.3 percent of the anesthesiology departments, 18.1 percent of the radiology departments, and 8.6 percent of the pathology departments.

It is evident from Table A5 that contract methods of reimbursement and the exclusive use of one type of reimbursement method are more prevalent in the hospital-based departments than in the non hospital-based departments. However, many hospitals do not use an exclusive reimbursement method to pay physicians in a given department. Table A6 thru A13 indicate in greater detail the mix of compensation methods used by different hospital departments. Each row indicates the number of hospitals which use the compensation methods noted by 1s. (A 0 means that the compensation method was not used.) The first row reports the number of hospitals which did not report any compensation information.

D. Variation in Compensation Across Departments in the Same Hospital

As demonstrated in the previous section, compensation methods within a given hospital department will often vary from physician to physician. In this section we will examine the variation in compensation methods among departments in the same hospital. Table A14 presents two-way cross tabulations of responses to the IOM compensation questions. The compensation method used in each of the four IOM hospital based specialties is compared with the compensation method used in each of the other specialties. It is evident from the table that many hospitals identified the compensation method used in one department as fee-for-service, percentage arrangement, or salary, yet did not choose either of these three methods as best representing the compensation method used in one of the other specialties. It is not possible to know whether the absence of response indicates that the hospital did not maintain a contract with physicians in a particular specialty or whether the hospital merely chose not to respond to the compensation question being asked about that specialty.

TABLE A6
INTERNAL MEDICINE
DISTRIBUTION OF HOSPITALS BY COMPENSATION METHODS

| <u>N</u> | <u>Full-Time Salary</u> | <u>Part-Time Salary</u> | <u>Full-Time Contract Other than Salary</u> | <u>Part-Time Contract Other Than Salary</u> | <u>No-Contract Primary Affiliation This Hospital</u> | <u>No-Contract Primary Affiliation Other Hospital</u> |
|----------|-----------------------------|-----------------------------|---|---|--|---|
| 248 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| 9 | 1 | 0 | 0 | 0 | 0 | 0 |
| 14 | 1 | 1 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 1 | 0 | 0 |
| 3 | 1 | 0 | 0 | 1 | 0 | 0 |
| 5 | 1 | 1 | 0 | 1 | 0 | 0 |
| 68 | 0 | 0 | 0 | 0 | 1 | 0 |
| 19 | 0 | 1 | 0 | 0 | 1 | 0 |
| 20 | 1 | 0 | 0 | 0 | 1 | 0 |
| 31 | 1 | 1 | 0 | 0 | 1 | 0 |
| 12 | 0 | 0 | 1 | 0 | 1 | 0 |
| 3 | 0 | 1 | 1 | 0 | 1 | 0 |
| 4 | 1 | 0 | 1 | 0 | 1 | 0 |
| 7 | 1 | 1 | 1 | 0 | 1 | 0 |
| 20 | 0 | 0 | 0 | 1 | 1 | 0 |
| 11 | 0 | 1 | 0 | 1 | 1 | 0 |
| 7 | 1 | 0 | 0 | 1 | 1 | 0 |
| 12 | 1 | 1 | 0 | 1 | 1 | 0 |
| 8 | 0 | 0 | 1 | 1 | 1 | 0 |
| 5 | 0 | 1 | 1 | 1 | 1 | 0 |
| 2 | 1 | 0 | 1 | 1 | 1 | 0 |
| 4 | 1 | 1 | 1 | 1 | 1 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6 | 0 | 1 | 0 | 0 | 0 | 1 |
| 4 | 1 | 0 | 0 | 0 | 0 | 1 |
| 9 | 1 | 1 | 0 | 0 | 0 | 1 |
| 4 | 0 | 0 | 1 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| 3 | 1 | 1 | 0 | 1 | 0 | 1 |
| 8 | 0 | 0 | 1 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| 18 | 0 | 0 | 0 | 0 | 1 | 1 |
| 18 | 0 | 1 | 0 | 0 | 1 | 1 |
| 7 | 1 | 0 | 0 | 0 | 1 | 1 |
| 21 | 1 | 1 | 0 | 0 | 1 | 1 |
| 6 | 0 | 0 | 1 | 0 | 1 | 1 |
| 7 | 0 | 1 | 1 | 0 | 1 | 1 |
| 4 | 1 | 1 | 1 | 0 | 1 | 1 |
| 13 | 0 | 0 | 0 | 1 | 1 | 1 |
| 9 | 0 | 1 | 0 | 1 | 1 | 1 |
| 10 | 1 | 0 | 0 | 1 | 1 | 1 |
| 8 | 1 | 1 | 0 | 1 | 1 | 1 |
| 6 | 0 | 0 | 1 | 1 | 1 | 1 |
| 6 | 0 | 1 | 1 | 1 | 1 | 1 |
| 5 | 1 | 0 | 1 | 1 | 1 | 1 |
| 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| 709 | | | | | | |

Source: MEDORG Survey

TABLE A7

SURGERY

DISTRIBUTION OF HOSPITALS BY COMPENSATION METHODS

| <u>N</u> | <u>Full-Time Salary</u> | <u>Part-Time Salary</u> | <u>Full-Time Contract Other Than Salary</u> | <u>Part-Time Contract Other Than Salary</u> | <u>No-Contract Primary Affiliation This Hospital</u> | <u>No-Contract Primary Affiliation Other Hospital</u> |
|----------|-----------------------------|-----------------------------|---|---|--|---|
| 239 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 1 | 0 | 0 | 0 | 0 |
| 7 | 1 | 0 | 0 | 0 | 0 | 0 |
| 10 | 1 | 1 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| 5 | 1 | 0 | 0 | 1 | 0 | 0 |
| 2 | 1 | 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| 114 | 0 | 0 | 0 | 0 | 1 | 0 |
| 41 | 0 | 1 | 0 | 0 | 1 | 0 |
| 21 | 1 | 0 | 0 | 0 | 1 | 0 |
| 14 | 1 | 1 | 0 | 0 | 1 | 0 |
| 13 | 0 | 0 | 1 | 0 | 1 | 0 |
| 3 | 0 | 1 | 1 | 0 | 1 | 0 |
| 3 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| 7 | 0 | 0 | 0 | 1 | 1 | 0 |
| 2 | 0 | 1 | 0 | 1 | 1 | 0 |
| 2 | 1 | 1 | 0 | 1 | 1 | 0 |
| 5 | 0 | 0 | 1 | 1 | 1 | 0 |
| 1 | 1 | 0 | 1 | 1 | 1 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4 | 0 | 1 | 0 | 0 | 0 | 1 |
| 4 | 1 | 0 | 0 | 0 | 0 | 1 |
| 15 | 1 | 1 | 0 | 0 | 0 | 1 |
| 5 | 0 | 0 | 1 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 2 | 1 | 0 | 0 | 1 | 0 | 1 |
| 4 | 1 | 1 | 0 | 1 | 0 | 1 |
| 7 | 0 | 0 | 1 | 1 | 0 | 1 |
| 61 | 0 | 0 | 0 | 0 | 1 | 1 |
| 37 | 0 | 1 | 0 | 0 | 1 | 1 |
| 12 | 1 | 0 | 0 | 0 | 1 | 1 |
| 9 | 1 | 1 | 0 | 0 | 1 | 1 |
| 14 | 0 | 0 | 1 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| 2 | 1 | 1 | 1 | 0 | 1 | 1 |
| 4 | 0 | 0 | 0 | 1 | 1 | 1 |
| 4 | 0 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 5 | 0 | 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 2 | 1 | 0 | 1 | 1 | 1 | 1 |
| 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| 709 | | | | | | |

Source: MEDORG Survey

TABLE A8

FAMILY PRACTICE

DISTRIBUTION OF HOSPITALS BY COMPENSATION METHODS

| <u>N</u> | <u>Full-Time Salary</u> | <u>Part-Time Salary</u> | <u>Full-Time Contract Other Than Salary</u> | <u>Part-Time Contract Other Than Salary</u> | <u>No-Contract Primary Affiliation This Hospital</u> | <u>No-Contract Primary Affiliation Other Hospital</u> |
|----------|-----------------------------|-----------------------------|---|---|--|---|
| 403 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 1 | 0 | 0 | 0 | 0 |
| 9 | 1 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| 2 | 1 | 0 | 0 | 1 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| 135 | 0 | 0 | 0 | 0 | 1 | 0 |
| 18 | 0 | 1 | 0 | 0 | 1 | 0 |
| 14 | 1 | 0 | 0 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 |
| 6 | 0 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| 3 | 1 | 0 | 0 | 1 | 1 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4 | 0 | 1 | 0 | 0 | 0 | 1 |
| 2 | 1 | 0 | 0 | 0 | 0 | 1 |
| 2 | 1 | 1 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 1 | 0 | 0 | 1 |
| 2 | 0 | 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 | 0 | 1 |
| 51 | 0 | 0 | 0 | 0 | 1 | 1 |
| 5 | 0 | 1 | 0 | 0 | 1 | 1 |
| 8 | 1 | 0 | 0 | 0 | 1 | 1 |
| 2 | 1 | 1 | 0 | 0 | 1 | 1 |
| 4 | 0 | 0 | 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| 2 | 0 | 0 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| 709 | | | | | | |

Source: MEDORG Survey

TABLE A9

PEDIATRICS

DISTRIBUTION OF HOSPITALS BY COMPENSATION METHODS

| N | Full-Time Salary | Part-Time Salary | Full-Time Contract Other Than Salary | Part-Time Contract Other Than Salary | No-Contract Primary Affiliation This Hospital | No-Contract Primary Affiliation Other Hospital |
|-----|---------------------|---------------------|---|---|--|---|
| 265 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 1 | 0 | 0 | 0 | 0 |
| 13 | 1 | 0 | 0 | 0 | 0 | 0 |
| 13 | 1 | 1 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 1 | 0 | 0 |
| 2 | 1 | 0 | 0 | 1 | 0 | 0 |
| 3 | 1 | 1 | 0 | 1 | 0 | 0 |
| 120 | 0 | 0 | 0 | 0 | 1 | 0 |
| 31 | 0 | 1 | 0 | 0 | 1 | 0 |
| 28 | 1 | 0 | 0 | 0 | 1 | 0 |
| 17 | 1 | 1 | 0 | 0 | 1 | 0 |
| 13 | 0 | 0 | 1 | 0 | 1 | 0 |
| 2 | 0 | 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| 8 | 0 | 0 | 0 | 1 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| 2 | 1 | 0 | 0 | 1 | 1 | 0 |
| 2 | 1 | 1 | 0 | 1 | 1 | 0 |
| 4 | 0 | 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 1 | 1 | 1 | 1 | 0 |
| 2 | 1 | 0 | 1 | 1 | 1 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 1 |
| 8 | 0 | 1 | 0 | 0 | 0 | 1 |
| 6 | 1 | 0 | 0 | 0 | 0 | 1 |
| 9 | 1 | 1 | 0 | 0 | 0 | 1 |
| 5 | 0 | 0 | 1 | 0 | 0 | 1 |
| 2 | 0 | 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| 2 | 1 | 0 | 0 | 1 | 0 | 1 |
| 3 | 1 | 1 | 0 | 1 | 0 | 1 |
| 8 | 0 | 0 | 1 | 1 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| 59 | 0 | 0 | 0 | 0 | 1 | 1 |
| 12 | 0 | 1 | 0 | 0 | 1 | 1 |
| 8 | 1 | 0 | 0 | 0 | 1 | 1 |
| 17 | 1 | 1 | 0 | 0 | 1 | 1 |
| 8 | 0 | 0 | 1 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 2 | 0 | 0 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 2 | 0 | 0 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 709 | 1 | 1 | 1 | 1 | 1 | 1 |

Source: MEDORG Survey

TABLE A10
OBSTETRICS/GYNECOLOGY
DISTRIBUTION OF HOSPITALS BY COMPENSATION METHODS

| <u>N</u> | <u>Full-Time Salary</u> | <u>Part-Time Salary</u> | <u>Full-Time Contract Other Than Salary</u> | <u>Part-Time Contract Other Than Salary</u> | <u>No-Contract Primary Affiliation This Hospital</u> | <u>No-Contract Primary Affiliation Other Hospital</u> |
|----------|-----------------------------|-----------------------------|---|---|--|---|
| 271 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 1 | 0 | 0 | 0 | 0 |
| 11 | 1 | 0 | 0 | 0 | 0 | 0 |
| 9 | 1 | 1 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 1 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 |
| 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| 2 | 1 | 1 | 0 | 1 | 0 | 0 |
| 151 | 0 | 0 | 0 | 0 | 1 | 0 |
| 31 | 0 | 1 | 0 | 0 | 1 | 0 |
| 22 | 1 | 0 | 0 | 0 | 1 | 0 |
| 12 | 1 | 1 | 0 | 0 | 1 | 0 |
| 8 | 0 | 0 | 1 | 0 | 1 | 0 |
| 2 | 0 | 1 | 1 | 0 | 1 | 0 |
| 2 | 1 | 0 | 1 | 0 | 1 | 0 |
| 6 | 0 | 0 | 0 | 1 | 1 | 0 |
| 2 | 1 | 0 | 0 | 1 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| 3 | 0 | 0 | 1 | 1 | 1 | 0 |
| 1 | 1 | 0 | 1 | 1 | 1 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4 | 0 | 1 | 0 | 0 | 0 | 1 |
| 3 | 1 | 0 | 0 | 0 | 0 | 1 |
| 7 | 1 | 1 | 0 | 0 | 0 | 1 |
| 6 | 0 | 0 | 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 1 | 0 | 0 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 2 | 1 | 0 | 0 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 |
| 7 | 0 | 0 | 1 | 1 | 0 | 1 |
| 57 | 0 | 0 | 0 | 0 | 1 | 1 |
| 25 | 0 | 1 | 0 | 0 | 1 | 1 |
| 7 | 1 | 0 | 0 | 0 | 1 | 1 |
| 6 | 1 | 1 | 0 | 0 | 1 | 1 |
| 8 | 0 | 0 | 1 | 0 | 1 | 1 |
| 2 | 0 | 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| 4 | 0 | 0 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 2 | 0 | 0 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 709 | 1 | 1 | 1 | 1 | 1 | 1 |

Source: MEDORG Survey

TABLE A11

ANESTHESIOLOGISTS

DISTRIBUTION OF HOSPITALS BY COMPENSATION METHODS

| <u>N</u> | <u>Full-Time Salary</u> | <u>Part-Time Salary</u> | <u>Full-Time Other</u> | <u>Part-Time Other</u> | <u>Non-Contract Primary</u> | <u>Non-Contract Other</u> |
|----------|-----------------------------|-----------------------------|----------------------------|----------------------------|---------------------------------|-------------------------------|
| 256 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 1 | 0 | 0 | 0 | 0 |
| 45 | 1 | 0 | 0 | 0 | 0 | 0 |
| 6 | 1 | 1 | 0 | 0 | 0 | 0 |
| 72 | 0 | 0 | 1 | 0 | 0 | 0 |
| 4 | 0 | 1 | 1 | 0 | 0 | 0 |
| 4 | 1 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 0 | 0 |
| 2 | 1 | 0 | 0 | 1 | 0 | 0 |
| 2 | 1 | 1 | 0 | 1 | 0 | 0 |
| 6 | 0 | 0 | 1 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| 160 | 0 | 0 | 0 | 0 | 1 | 0 |
| 14 | 0 | 1 | 0 | 0 | 1 | 0 |
| 10 | 1 | 0 | 0 | 0 | 1 | 0 |
| 3 | 1 | 1 | 0 | 0 | 1 | 0 |
| 16 | 0 | 0 | 1 | 0 | 1 | 0 |
| 2 | 0 | 1 | 1 | 0 | 1 | 0 |
| 2 | 0 | 0 | 0 | 1 | 1 | 0 |
| 4 | 0 | 0 | 1 | 1 | 1 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 1 |
| 4 | 0 | 1 | 0 | 0 | 0 | 1 |
| 12 | 1 | 0 | 0 | 0 | 0 | 1 |
| 4 | 1 | 1 | 0 | 0 | 0 | 1 |
| 10 | 0 | 0 | 1 | 0 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| 3 | 1 | 0 | 0 | 1 | 0 | 1 |
| 4 | 0 | 0 | 1 | 1 | 0 | 1 |
| 25 | 0 | 0 | 0 | 0 | 1 | 1 |
| 2 | 0 | 1 | 0 | 0 | 1 | 1 |
| 2 | 1 | 0 | 0 | 0 | 1 | 1 |
| 5 | 0 | 0 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 2 | 0 | 0 | 0 | 1 | 1 | 1 |
| 709 | | | | | | |

Source: MEDORG Survey

TABLE A12

RADIOLOGISTS

DISTRIBUTION OF HOSPITALS BY COMPENSATION METHODS

| <u>N</u> | <u>Full-Time Salary</u> | <u>Part-Time Salary</u> | <u>Full-Time Other</u> | <u>Part-Time Other</u> | <u>Non-Contract Primary</u> | <u>Non-Contract Other</u> |
|----------|-----------------------------|-----------------------------|----------------------------|----------------------------|---------------------------------|-------------------------------|
| 241 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 1 | 0 | 0 | 0 | 0 |
| 41 | 1 | 0 | 0 | 0 | 0 | 0 |
| 23 | 1 | 1 | 0 | 0 | 0 | 0 |
| 106 | 0 | 0 | 1 | 0 | 0 | 0 |
| 2 | 0 | 1 | 1 | 0 | 0 | 0 |
| 4 | 1 | 0 | 1 | 0 | 0 | 0 |
| 2 | 1 | 1 | 1 | 0 | 0 | 0 |
| 35 | 0 | 0 | 0 | 1 | 0 | 0 |
| 3 | 0 | 1 | 0 | 1 | 0 | 0 |
| 2 | 1 | 0 | 0 | 1 | 0 | 0 |
| 4 | 1 | 1 | 0 | 1 | 0 | 0 |
| 69 | 0 | 0 | 0 | 0 | 1 | 0 |
| 2 | 0 | 1 | 0 | 0 | 1 | 0 |
| 13 | 1 | 0 | 0 | 0 | 1 | 0 |
| 7 | 1 | 1 | 0 | 0 | 1 | 0 |
| 30 | 0 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 1 | 0 | 1 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| 22 | 0 | 0 | 1 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| 5 | 0 | 0 | 1 | 1 | 1 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 10 | 1 | 0 | 0 | 0 | 0 | 1 |
| 10 | 1 | 1 | 0 | 0 | 0 | 1 |
| 8 | 0 | 0 | 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 |
| 5 | 0 | 0 | 0 | 1 | 0 | 1 |
| 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| 3 | 1 | 1 | 0 | 1 | 0 | 1 |
| 5 | 0 | 0 | 1 | 1 | 0 | 1 |
| 14 | 0 | 0 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 | 1 | 1 |
| 2 | 1 | 0 | 0 | 0 | 1 | 1 |
| 6 | 0 | 0 | 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 | 1 | 1 |
| 709 | | | | | | |

Source: MEDORG Survey

TABLE A13

PATHOLOGISTS

DISTRIBUTION OF HOSPITALS BY COMPENSATION METHODS

| <u>N</u> | <u>Full-Time Salary</u> | <u>Part-Time Salary</u> | <u>Full-Time Other</u> | <u>Part-Time Other</u> | <u>Non-Contract Primary</u> | <u>Non-Contract Other</u> |
|----------|-----------------------------|-----------------------------|----------------------------|----------------------------|---------------------------------|-------------------------------|
| 244 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 1 | 0 | 0 | 0 | 0 |
| 99 | 1 | 0 | 0 | 0 | 0 | 0 |
| 27 | 1 | 1 | 0 | 0 | 0 | 0 |
| 106 | 0 | 0 | 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 | 0 | 0 |
| 3 | 1 | 0 | 1 | 0 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 | 0 | 0 |
| 25 | 0 | 0 | 0 | 1 | 0 | 0 |
| 2 | 0 | 1 | 0 | 1 | 0 | 0 |
| 5 | 1 | 0 | 0 | 1 | 0 | 0 |
| 2 | 1 | 1 | 0 | 1 | 0 | 0 |
| 16 | 0 | 0 | 1 | 1 | 0 | 0 |
| 34 | 0 | 0 | 0 | 0 | 1 | 0 |
| 5 | 0 | 1 | 0 | 0 | 1 | 0 |
| 22 | 1 | 0 | 0 | 0 | 1 | 0 |
| 7 | 1 | 1 | 0 | 0 | 1 | 0 |
| 35 | 0 | 0 | 1 | 0 | 1 | 0 |
| 1 | 0 | 1 | 1 | 0 | 1 | 0 |
| 3 | 1 | 0 | 1 | 0 | 1 | 0 |
| 5 | 0 | 0 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 | 0 | 0 | 1 |
| 5 | 1 | 0 | 0 | 0 | 0 | 1 |
| 6 | 1 | 1 | 0 | 0 | 0 | 1 |
| 12 | 0 | 0 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| 3 | 1 | 1 | 0 | 1 | 0 | 1 |
| 5 | 0 | 0 | 1 | 1 | 0 | 1 |
| 5 | 0 | 0 | 0 | 0 | 1 | 1 |
| 3 | 1 | 0 | 0 | 0 | 1 | 1 |
| 3 | 1 | 1 | 0 | 0 | 1 | 1 |
| 3 | 0 | 0 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 | 1 | 1 |
| 709 | | | | | | |

Source: MEDORG Survey

TABLE A14

VARIATION IN COMPENSATION METHODS
ACROSS DEPARTMENTS IN THE SAME HOSPITAL
(IOM SURVEY)

| RADIOLOGISTS ANESTHESIOLOGISTS | | | | | |
|-----------------------------------|--------------------|---------|--------|--------------------------------|-----|
| | Fee for Service | Percent | Salary | No-Contract or Not Reported | |
| Fee-for-Service | 17 | 15 | 8 | 18 | 58 |
| Percent | 1 | 6 | 0 | 4 | 11 |
| Salary | 7 | 13 | 11 | 10 | 41 |
| No-Contract or Not Reported | 52 | 69 | 31 | 447 | 599 |
| | 77 | 103 | 50 | 479 | 709 |

| ANATOMICAL PATHOLOGISTS ANESTHESIOLOGISTS | | | | | |
|---|--------------------|---------|--------|--------------------------------|-----|
| | Fee for Service | Percent | Salary | No-Contract or Not Reported | |
| Fee-for-Service | 5 | 8 | 15 | 30 | 58 |
| Percent | 0 | 5 | 1 | 5 | 11 |
| Salary | 1 | 7 | 11 | 22 | 41 |
| No-Contract or Not Reported | 16 | 50 | 36 | 497 | 599 |
| | 22 | 70 | 63 | 554 | 709 |

| CLINICAL PATHOLOGISTS ANESTHESIOLOGISTS | | | | | |
|---|--------------------|---------|--------|--------------------------------|-----|
| | Fee for Service | Percent | Salary | No-Contract or Not Reported | |
| Fee-for-Service | 3 | 7 | 7 | 41 | 58 |
| Percent | 0 | 4 | 0 | 7 | 11 |
| Salary | 1 | 3 | 10 | 27 | 41 |
| No-Contract or Not Reported | 14 | 48 | 30 | 507 | 599 |
| | 18 | 62 | 47 | 582 | 709 |

| ANATOMICAL PATHOLOGISTS RADIOLOGISTS | | | | | |
|--|--------------------|---------|--------|--------------------------------|-----|
| | Fee for Service | Percent | Salary | No-Contract or Not Reported | |
| Fee-for-Service | 10 | 12 | 10 | 45 | 77 |
| Percent | 1 | 25 | 16 | 61 | 103 |
| Salary | 1 | 2 | 25 | 22 | 50 |
| No-Contract or Not Reported | 10 | 31 | 12 | 426 | 479 |
| | 22 | 70 | 63 | 554 | 709 |

TABLE A14

CLINICAL
PATHOLOGISTS

| RADIOLOGISTS | Fee for Service | Percent | Salary | No-Contract or Not Reported | |
|--------------------------------|--------------------|---------|--------|--------------------------------|-----|
| Fee-for-Service | 6 | 15 | 9 | 47 | 77 |
| Percent | 0 | 27 | 11 | 65 | 103 |
| Salary | 3 | 0 | 12 | 35 | 50 |
| No-Contract or Not Reported | 9 | 20 | 15 | 435 | 479 |
| | 18 | 62 | 47 | 582 | |

CLINICAL
PATHOLOGISTS

| ANATOMICAL PATHOLOGISTS | Fee for Service | Percent | Salary | No-Contract or Not Reported | |
|--------------------------------|--------------------|---------|--------|--------------------------------|-----|
| Fee-for-Service | 6 | 2 | 1 | 13 | 22 |
| Percent | 0 | 8 | 0 | 62 | 70 |
| Salary | 2 | 0 | 11 | 50 | 63 |
| No-Contract or Not Reported | 10 | 52 | 35 | 457 | 554 |
| | 18 | 62 | 47 | 582 | 709 |

Source: IOM Survey

TABLE A15

VARIATIONS IN COMPENSATION METHOD ACROSS DEPARTMENTS
(MEDORG SURVEY)

| | <u>Number</u> | <u>Percent</u> |
|--|---------------|----------------|
| Salary arrangements in all specialties | 57 | 14.2 |
| Salary arrangements in all non hospital-based specialties | 103 | 25.7 |
| Salary arrangements in all hospital-based specialties | 76 | 19.0 |
| Salary arrangements in <u>no</u> specialty | 101 | 25.2 |
| Salary arrangements in <u>no</u> non hospital-based specialty | 131 | 32.7 |
| Salary arrangements in no hospital-based specialty | 200 | 49.9 |
| <hr/> | | |
| Contract other than salary in all specialties | 24 | 6.0 |
| Contract other than salary in all non hospital-based specialties | 44 | 11.0 |
| Contract other than salary in all hospital-based specialties | 82 | 20.4 |
| Contract other than salary in <u>no</u> specialty | 98 | 24.4 |
| Contract other than salary in <u>no</u> non hospital-based specialty | 197 | 49.1 |
| Contract other than salary in <u>no</u> hospital-based specialty | 122 | 30.4 |
| <hr/> | | |
| No-contract in all specialties | 122 | 30.4 |
| No-contract in all non hospital-based specialties | 363 | 90.5 |
| No-contract in all hospital-based specialties | 127 | 31.7 |
| No-contract in <u>no</u> specialty | 20 | 5.0 |
| No-contract in <u>no</u> non hospital-based specialty | 20 | 5.0 |
| No-contract in <u>no</u> hospital-based specialty | 109 | 27.2 |

N = 401*

*Includes hospitals with programs in all of the specialties of internal medicine, surgery, obstetrics/gynecology, pediatrics, anesthesiology, pathology and radiology. Family practice is omitted in this table.

Source: MEDORG Survey

If we look only at hospitals who reported having a contract with both specialties being compared in the table, we find that a sizeable proportion use a different compensation method for one specialty versus another. Of the 78 hospitals that reported using a particular contract compensation method for anesthesiology, only 50 percent employed the same compensation method in paying radiologists. Forty percent of the hospitals reported the same contract compensation method for anesthesiologists and anatomical pathologists, and 50 percent reported similar methods for clinical pathologists and radiologists. The largest correspondence in payment method was for radiologists and pathologists where a similar method was used between 54 percent (clinical pathologists) and 60 percent (anatomical pathologists) of the time.

Table A15 reports similar data for hospitals responding to the MEDORG survey. Only 14.2 percent of hospitals reported salary contracts in all specialties considered. Uniform nonsalary contract arrangements were even less frequent, with only 6 percent of hospitals reporting similarly for all specialties. However, uniform salary arrangements appear more common among non hospital-based specialties (25.7 percent of hospitals), while nonsalary contracts are more common among all hospital-based specialties (20.4 percent of hospitals).

It seems clear from this review that much more care needs to be taken in defining precisely methods of compensation. Variations across hospitals and specialties is extensive. Even within a department, several methods may exist, probably reflecting differences in physicians' tenure, duties, and affiliation with the department. Finally, it also appears that these arrangements are in a state of flux.

Appendix 2

Physician Compensation Methods Questions
from MEDORG and IOM Surveys

Physician Compensation Methods MEDORG Survey

DEFINITIONS**CONTRACT PHYSICIANS**

Include within this category every physician with whom your hospital maintains some written or oral compensation contract. Hospital remuneration is considered to be that made from funds managed or controlled by the hospital administration and/or governing body. For the purposes of this survey, count numbers of physicians, not full-time equivalents.

Fixed Salary:

- Full-time — Physicians who receive from hospital-controlled funds a fixed annual salary for their full-time services and who are not permitted to earn money from other professional activities. However, this does not preclude payments such as honoraria, royalties on publications or patents, etc.
- Part-time — Physicians who receive from hospital-controlled funds a fixed annual salary for their part-time services.

Other Compensation Plan:

- Full-time — Physicians who perform professional services at no other hospital and are compensated from hospital-managed or hospital-controlled funds by a mechanism **other than salary**. This may include fee-for-service, percentage of departmental income, other arrangements or combinations of arrangements.

Also include in this group those in the category referred to as "Geographic Full-time", that is, physicians who derive their entire professional income while **physically located** in your hospital. The hospital guarantees them a base amount for services rendered and may or may not set a limit on supplementary income earned or time devoted to other activities. However, this does not preclude payments such as honoraria, royalties on publications or patents, etc.
- Part-time — Physicians who perform professional services not exclusively at your hospital and who are compensated from departmental-managed or hospital-controlled funds by a mechanism **other than salary**. This may include fee-for-service, percentage of departmental income, other arrangements or combinations of arrangements.

NONCONTRACT PHYSICIANS

Include within this category every physician accredited to your hospital with whom no compensation arrangement from hospital-managed funds is maintained. For the purposes of this survey, count numbers of physicians, not full-time equivalents.

Voluntary:

- Major professional activity — This is intended as an estimated indicator of the physician's primary hospital when he might be affiliated with two or more institutions.

NUMBERS OF MEDICAL STAFF

Please fill in the following table for physicians on staff as of January 1, 1973.
Do not include house staff. Please refer to the listing of definitions.

| Active Staff Department | Contract | | | | Noncontract | |
|---|--|--|---|---|--|--|
| | Indicate by department the number of Active Staff physicians receiving any direct hospital remuneration. Report whether compensation is by 1) fixed salary, or, 2) compensation plan other than salary (as percentage of departmental income, fee-for-service, or other arrangements). | | | | Indicate by department the number of Active Staff physicians not compensated directly from hospital funds. | |
| | Fixed Salary | | Other Compensation Plan | | Voluntary | |
| | A-1 Full-time (no other income) | A-2 Part-time (hospital salary plus other income) | A-3 Full-time compensated service supplied at no other hospital or location | A-4 Part-time service supplied at additional hospitals or locations | A-5 major professional activity in your hospital | A-6 major professional activity in other hospital |
| Internal Medicine (and subspecialties) | | | | | | |
| Surgery (and subspecialties) | | | | | | |
| Ob - Gyn. | | | | | | |
| Pediatrics | | | | | | |
| Psychiatry | | | | | | |
| Family Practice | | | | | | |
| Anesthesiology | | | | | | |
| Pathology | | | | | | |
| Physical Medicine | | | | | | |
| Radiology | | | | | | |
| All other departments | | | | | | |

All other Medical Staff

A-7
ContractA-8
Noncontract

(Include Associate, Consulting, Courtesy,
etc. Do not include house staff.)

Please indicate the TOTAL number of medical staff for the dates specified.

A-9
ContractA-10
Noncontract

(a) Jan. 1, 1973

(b) Jan. 1, 1972

REQUIREMENTS FOR ACTIVE MEDICAL STAFF MEMBERSHIP

B-1(a) Is board-certification a requirement for the Active Medical Staff in your hospital?

☐ Yes ☐ No☐ Departmental guidelines vary (Please explain)

(b) How many physicians on your Active Medical Staff are board-certified?

B-2(a) Is board-eligibility a requirement for the Active Medical Staff in your hospital?

☐ Yes ☐ No☐ Departmental guidelines vary (Please explain)

(b) How many physicians on your Active Medical Staff are board-eligible?

B-3 Does your hospital require the Active Medical Staff to have County Medical Society membership?

☐ Yes ☐ No

NATIONAL ACADEMY OF SCIENCES
INSTITUTE OF MEDICINE

Survey of Teaching Hospitals

NO
1298

IOM NO. _____

PART I
HOSPITAL CHARACTERISTICS

Hospital Survey Coordinator

Person Completing Part I

Name _____

Name _____

Building and Room No. _____

Building and Room No. _____

Telephone _____

Telephone _____

This survey form is part of a study being conducted by the Institute of Medicine in response to a mandate from the Congress. Your assistance in ensuring that all questions are presented to the appropriate individual, correctly completed and promptly returned to the hospital survey coordinator will be appreciated. If you have any questions concerning either this form or the study itself, please contact the hospital survey coordinator for assistance.

DEFINITIONS

Academic Year The 12-month period designated by the medical/osteopathic/dental school for education of undergraduate medical/osteopathic/dental students.

Admissions Number of patients accepted for inpatient service in the hospital during the institution's fiscal year (exclude newborn).

AMA/AOA/ADA Approved Program Any graduate physician training program including interns, residents or fellows which is approved by the Council of Medical Education of the American Medical Association, the Committee on Post-Doctoral Education of the American Osteopathic Association, or the Council on Dental Education of the American Dental Association.

Beds Number of beds, cribs, and pediatric bassinets regularly maintained (set up and staffed for use) for inpatients as of the end of the latest complete fiscal year; does not include bassinets for newborn infants.

Births Number of infants born in the hospital and accepted for service in a newborn infant bassinet during an entire fiscal year (exclude stillbirths).

Departments Organized For Outpatient Service See Outpatient Encounters

Discharges Number of adult and pediatric discharges (including deaths) in an entire fiscal year.

Discharge Days Number of adult and pediatric days of care rendered to those patients discharged (include deaths) during the entire fiscal year. Includes days of care rendered to those patients prior to the beginning date of the fiscal year. Excludes days of care rendered to newborns. A discharge day of care is a period of service between the census-taking hours of two successive calendar days.

Emergency Room See Outpatient Encounters.

Fellow See Graduate Physician Trainees.

Fiscal Year (FY) The 12-month period designated by the hospital for financial recording purposes.

FMG See Medical Graduates.

Foreign Medical Graduate See Medical Graduates.

Full Time Equivalent See Personnel.

Full Time Personnel See Personnel.

FY See Fiscal Year.

Graduate Physician Trainees (Graduate Physicians in Training) These include individual interns, residents, fellows (mid or post residency), and other graduate physician trainees as defined below:

INTERN A graduate of a medical/osteopathic/dental (MOD) school serving a first period of post-doctoral training.

RESIDENT A graduate of a MOD school serving an advanced period of post-doctoral training. (This may represent the first year of graduate training.)

FELLOW (mid or post residency) A graduate of a MOD school who has had an advanced period of post-doctoral training and is in a fellowship program (this includes clinical fellows) in a subspecialty.

OTHER GRADUATE PHYSICIAN TRAINEE A graduate of a MOD school who is in a research or teaching fellowship, or other specialized educational activity, but who is not an intern, resident, or fellow as defined above.

House Officer (House Staff) A MOD school graduate in a program of clinical training, service, and education.

Inpatient Days Number of adult and pediatric days of care rendered during the entire fiscal year. Exclude days of care rendered to newborns. An inpatient day of care is a period of service between the census-taking hours on two successive calendar days, the day of discharge being counted only when the patient was admitted the same day.

Intern See Graduate Physician Trainees.

Medicaid Patients Those patients for whom the hospital bills for payment from the state agency (or its designated agent) administering Medicaid (Title XIX-Social Security Act). This does not include those patients for whom the Medicare deductibles and coinsurance are paid by Medicaid.

Medical Graduates

FMG (Foreign Medical Graduate): A graduate of a medical school outside the U.S., Puerto Rico, or Canada who was

not a U.S. or Canadian citizen at the time of graduation.
USFMG (United States Foreign Medical Graduate): A graduate of a medical school outside the U.S., Puerto Rico, and Canada, who was a U.S. or Canadian citizen at the time of graduation.
USMG (United States Medical Graduate): Any graduate of a U.S., Puerto Rican, or Canadian medical school, irrespective of citizenship.

Medical Service Plan An organization for the billing, collection, distribution and/or use of all specifically identified portions of the professional fees earned by participating physicians (e.g., Faculty Practice Plan, THEF, etc.)

Medical Staff Physicians with admitting privileges and hospital-based physicians, *excluding* interns, residents, fellows and other graduate physician trainees.

Medicare Patients Eligible patients for whom the hospital bills for payment from Medicare (Title XVIII—Social Security Act). This includes those patients for whom the Medicare deductibles and coinsurance are paid by Medicaid.

MOD School Medical/Osteopathic/Dental School.

Non-Teaching Patients Those patients whose care does *not* include the participation of house officers.

Osteopathic Hospital Those hospitals maintained to provide patients with a continuity of osteopathic care and to continue the training of osteopathic interns and residents.

Other Graduate Physician Trainee See Graduate Physician Trainees.

Other Public Assistance Patients Patients whose care is paid for by the hospital, city, county, state, or federal government under Title V of the Social Security Act, or other organizations which pay for charity patients, but excluding Medicare and Medicaid.

Outpatient Encounters

EMERGENCY ROOM Total encounters in an emergency unit(s).

DEPARTMENTS ORGANIZED FOR OUTPATIENT SERVICE Total outpatient encounters with each organized subunit of the outpatient department including free-standing community health centers.

(Example: Three outpatient encounters would be reported if an outpatient has an x-ray in the x-ray department, a blood test in the lab and skin test in the allergy unit.)

Part Time Personnel See Personnel.

Patient-Physician Relationship (as defined in Medicare Intermediary Letter 372) The patient receives his principal physician's services in the setting from his attending physician who will do, among other things, the following:

- a. review the patient's history, the record of examination and

- tests in the institution, and make frequent reviews of the patient's progress; and
- b. personally examine the patient; and
- c. confirm or revise the diagnosis and determine the course of treatment to be followed; and
- d. either perform the physician's services required by the patient or supervise the treatment so as to assure that appropriate services are provided by interns, residents, or others and that the care meets a proper quality level; and
- e. be present and ready to perform any service performed by an attending physician in a nonteaching setting when, a major surgical procedure or a complex or dangerous medical procedure is performed; for the physician to be an "attending physician" his presence as an attending physician must be necessary (not superfluous as where, for example, that resident performing the procedure is fully qualified to do so) from the medical standpoint; and
- f. be recognized by the patient as his personal physician and be personally responsible for the continuity of the patient's care, at least through the period of hospitalization.

Personnel

FULL TIME EQUIVALENT The hospital's conversion of personnel from full time and part time classifications to a comparable measure based on a pre-established full time work week.

FULL TIME PERSONNEL Personnel who work at least the minimum number of hours per week defined by the hospital as full time.

PART TIME PERSONNEL Personnel who work less than the minimum number of hours per week defined by the hospital as full time.

Physicians With Limited Appointments Those physicians who may attend patients in the hospital only under special and controlled circumstances.

Resident See Graduate Physician Trainees.

Teaching Physicians Physicians who have the primary responsibility for teaching activities related to graduate physicians in training or medical/osteopathic/dental undergraduate students in an identified clinical service.

Training Year The 12-month period designated by the training program for graduate physicians in training.

University/School-Owned Hospital Any hospital owned by a state or private university or by a school of medicine or osteopathy.

USFMG See Medical Graduates.

U.S. Foreign Medical Graduates See Medical Graduates.

USMG See Medical Graduates.

U.S. Medical Graduates See Medical Graduates.

- 1 Unless otherwise specified, please provide all data in Part I for the latest complete fiscal year. The hospital's latest complete fiscal year began on mo. / day / year ended on mo. / day / year.

HOSPITAL PROFILE

- 2 Is this an osteopathic hospital? ☐ yes ☐ no
- 3 Is this hospital university/school-owned (see definition)? ☐ yes ☐ no
 If YES, please give name of university/school: _____

UTILIZATION DATA

- 4 Estimate year first patient admitted: _____

- 7 Are the patients in columns C and D of question 6 located in geographically separate settings in the hospital?

☐ yes

☐ no

- 8 Please enter the following data for the latest complete fiscal year:

Total number of births (live and stillborn) _____

Total number of live births _____

Deliveries (live and stillborn) billed to Medicaid _____

- 9 Please enter the number of rooms with beds (excluding bassinets for newborn infants) set up and staffed on the last day of the latest complete fiscal year in the categories listed below:

1 bed rooms _____

2 bed rooms _____

3 and 4 bed rooms _____

5 and more bed rooms _____

- 10 Please enter the number of outpatient encounters in the following categories for the latest complete fiscal year. (See definitions of outpatient encounters, page 2.)

| Type of Encounter | Total Patients | Medicare Patients | Medicaid Patients | Other Public Assistance Patients | All Other Patients |
|---|----------------|-------------------|-------------------|----------------------------------|--------------------|
| a. Emergency Room | | | | | |
| b. Departments organized for outpatient service | | | | | |
| c. Total (a+b) | | | | | |

PHYSICIAN DATA

In question 11, use this hospital's classification of full time and part time.

- 11 Enter the number of physicians on the hospital's medical staff (i.e., physicians with admitting privileges and hospital-based physicians, *excluding* interns, residents and other graduate physician trainees) for the latest complete fiscal year.

- a. Salary Profile—Enter the number of physicians:

Salaried in whole or part from hospital, Medical/Osteopathic/Dental (MOD) school, and/or sponsoring organization funds*

Total _____

Full Time _____

Part time _____

Not salaried from hospital, MOD school, and/or sponsoring organization funds*

Total _____

*Fund source may be patient revenue, government appropriation, grants, university funds, etc.

- b. Enter the number of physicians with *limited appointments*, i.e., those physicians who may attend patients in this hospital only under special and controlled circumstances. _____
- c. Enter the number of teaching physicians, i.e., physicians who have the primary responsibility for teaching activities related to graduate physicians in training or medical/osteopathic/dental undergraduate students in an identified clinical service. _____

Please continue to page 5.



- 12 If the hospital provides any of the following hospital-based specialties through a contract with an independent physician or group of physicians, please enter the following data:

Example: Contract for Service X was initiated in 1967 for physician services, with an agreement for payment based on a percentage of gross.

| Service | Year Contract Initiated | Number of Full Time Equivalent Physicians | Total Compensation for physician services in latest fiscal year | Type of Financial Arrangement | | | |
|---------------------------|-------------------------|---|---|-------------------------------|-------------------------------------|--------|------------------------|
| | | | | Fee for Service | Percentage of Gross | Salary | Other (Please specify) |
| <i>Example: Service X</i> | <i>1967</i> | <i>4</i> | <i>\$100,000</i> | | <input checked="" type="checkbox"/> | | |
| Emergency Room | | | | | | | |
| Anesthesiology | | | | | | | |
| Anatomical Pathology | | | | | | | |
| Clinical Pathology | | | | | | | |
| Physiatry | | | | | | | |
| Respiratory Therapy | | | | | | | |
| Radiology | | | | | | | |
| Other, specify | | | | | | | |
| Other, specify | | | | | | | |

EDUCATIONAL DATA

- 13 Please list each MOD school and/or other hospital that:

a. uses services provided *by* this hospital to that institution; or b. provides services *to* this hospital from that institution.

For each school and/or other hospital please check the appropriate columns.

| Name of MOD School and/or Other Hospital | Services provided BY this hospital | | | | | Services provided TO this hospital | | | |
|--|--|---|--------------------------|------------------------|--|------------------------------------|---|--------------------------|------------------------|
| | Instruction of undergrad. MOD students | Services Related to Graduate Physician Training Program | Other Personnel Services | Equipment and Supplies | | Teaching Physicians | Services Related to Graduate Physician Training Program | Other Personnel Services | Equipment and Supplies |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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